



Prepared for Borough of Aspinwall

Comprehensive Parking Management Study

December 20, 2024



WALKER
CONSULTANTS



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December 20, 2024

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Borough of Aspinwall
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Re: *Report for Borough of Aspinwall Comprehensive Parking Management Study*
Aspinwall, PA
Walker Consultants Project # 20-002611.00

Dear Melissa:

Walker Consultants is pleased to submit for your review this Comprehensive Parking Management Study for the Borough of Aspinwall. Included within is a summary of existing conditions, a projection of future conditions, and listing of parking management policy and practice recommendations.

We appreciate the opportunity to be of service to you on this project. If you have any questions or comments, please do not hesitate to call.

Sincerely,

WALKER CONSULTANTS

A handwritten signature in blue ink that reads "Will Rhodin".

Will Rhodin
Senior Consultant

A handwritten signature in blue ink that reads "Megan Gardo".

Megan Gardo
Senior Analyst

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Executive Summary

Census data indicates the population in Aspinwall is growing, trending younger, more affluent, and increasingly more diverse over the last decade. Homeownership has also risen as more families settle in the borough. These changes have prompted the borough to take a more proactive approach to planning for the future. The borough of Aspinwall's 2022 Comprehensive Master Plan identified key issues it would like to address in the next ten years while outlining the strategies and action steps needed to meet those goals. Among those key issues identified was "Retooling Policies and Programs" to better align the community's policies, practices, and regulations with their changing needs. Reforming the borough's parking management program was one such action item recommended by the master plan, prompting Aspinwall to commission a comprehensive parking study. The study aims to quantify current and future parking needs, identify parking "hot spots," and recommend changes to current parking policies and operational practices to better balance supply and demand in the borough.

Existing Conditions

Developing strategies to address the borough's issues begins with listening. Walker participated in stakeholder interviews to solicit input from residents, business owners, employees, and borough staff. This qualitative feedback was combined with quantitative analysis. Walker confirmed the parking supply within the study area, in both Upper and Lower Aspinwall, and collected parking occupancy data on both a weekday and a Saturday with assistance from borough staff and volunteers. Occupancy data was collected during the week of October 21, 2024. Five counts were performed over 12 hours, with the first count starting at 9:00 am and the last at 8:00 pm.

In Upper Aspinwall, peak weekday parking occupancy occurred during the 8:00 pm count when 43%, or 190 of the 440 available parking spaces, were occupied. During the Saturday survey, peak conditions occurred during the 6:00 pm count when 43% of the available spaces were occupied. Given the primarily residential nature of Upper Aspinwall, the observed evening peaks are in line with typical use patterns. Additionally, while localized "hot spots" exist, the overall utilization rates do not suggest a parking shortage.

Parking activity in Lower Aspinwall varied by zone due to the mix of land uses. Peak weekday parking occupancy in Lower Aspinwall occurred during the 6:00 pm count when about 47% of the available supply, or 909 of the 1,954 available spaces, were occupied. However, peak parking conditions varied depending on the zone. In Zone B, where both the Commercial Street and Brilliant Avenue business districts are located, peak weekday parking occupancy occurred during the noon count when 57% of the supply was utilized. In Zones C and D, peak occupancy was observed during the 8:00 pm count when 48% and 55% of the available parking supply was utilized.





The map to the left illustrates utilization by block and lot during peak weekday conditions in Lower Aspinwall. While the overall utilization (47%) does not suggest a shortage, localized high occupancy areas were observed.

During the Saturday survey, peak parking occupancy in Lower Aspinwall occurred during the noon count, with about 900 occupied spaces or 46% of the available parking supply utilized. Again, activity in the different zones within Lower Aspinwall peaked at various times. Zone B, a more commercially driven area, peaked during the noon count, with 47% of the supply occupied. Several of the lots along Freeport Road are highlighted in orange and red on the noon map to the left.



In Zones C and D, the peak occurred during the 8:00 pm count when 49% and 59% of the available supply was occupied. As shown on the map, the commercial lots are generally less than 50% occupied, but several residential streets, particularly between Field Avenue and Eastern Avenue, experienced occupancy rates above 85%. When occupancy levels reach these levels, drivers may experience frustration and delays in finding a parking space.



Future Conditions

Much of Aspinwall is developed as a mature suburb of Pittsburgh, which limits its growth opportunities. Walker primarily focused on Lower Aspinwall when projecting future parking conditions. Based on discussions with borough leadership, the following development plans were identified:

- Vacant commercial spaces totaling approximately 16,000 SF along Freeport Road
- New pickleball courts at the recreational area between the Route 28 on-ramp and Field Avenue
- Expansion of the Allegheny RiverTrail Park

Several of the vacant commercial spaces along Freeport Road have access to private off-street parking. Additionally, there is a surplus of publicly available parking to accommodate any overflow. However, the new pickleball courts, combined with existing activity from the baseball fields, are expected to create localized parking shortages. An approximately 20-space deficit is projected on both a weekday and Saturday evening; on-street parking in the immediate area around the field is also expected to be at or above capacity. Potential strategies to address this shortage are discussed in the recommendation section.

While Walker anticipates the Allegheny RiverTrail Park will provide sufficient on-site parking to accommodate any additional demand generated by the expansion of the trail program, the borough has an opportunity to capture additional customers utilizing the park. There is sufficient capacity in the parking along Freeport Road to accommodate additional demand for retail and restaurant customers. The borough should also plan to add bicycle parking at strategic locations along Freeport Road to support multi-modal access from the trail.

In addition to these projects, the Comprehensive Master Plan proposed activating Alley A between Eastern and Brilliant Avenues by temporarily restricting vehicular access and creating a pedestrianized street. While the proposed activation could temporarily restrict access to up to 30 residential and commercial parking spaces, the parking system has sufficient capacity to accommodate the displaced vehicles, specifically along Freeport Road. The new pedestrianized street could generate additional parking demand as businesses add secondary frontage along the alley. However, more regular activation of the alley may also capture existing customers who would otherwise use the primary frontage entrance. Further study with economic partners is needed to understand the potential for increased activity. For special events utilizing Alley A, the borough should work with the sponsor organization to develop a special event parking and transportation plan.

Recommendations

The goals of any parking system are centered on providing the most efficient and friendly parking experience to residents, patrons, and visitors. This outcome is accomplished through various parking policies promoting a positive customer experience while ensuring supply is available for commercial, residential, and civic activity. Management of the parking supply plays a key role in ensuring that residents, visitors, and patrons find parking quickly and efficiently while assisting in mitigating unwanted on-street parking by long-term users, including employees. Walker's recommendations for Aspinwall incorporate the following strategies that promote effective management of the entire parking system:

- Prudent use of available parking technologies;

- Consistent but fair enforcement;
- Promotion of a range of parking and mobility choices;
- Clear and understandable options, policies, signage, and wayfinding;
- Balancing the needs of residents, employees, visitors, business owners; and
- Establishing a sustainable financial structure.

Internal Parking Operations

- **Develop a mission statement** to help guide the discussion and actions of the organization around parking.
- **Review and update job descriptions, policies and operating procedures** to serve as the “how” and “why” behind specific tasks and responsibilities, especially as other policy recommendations are adopted.
- **Create a parking enterprise fund** to present an accurate accounting of parking activities, promote transparency, and support critical initiatives.

Communication, Marketing, and Wayfinding

- **Conduct an inventory of on-street signage** and take appropriate actions to replace outdated or inconsistent signage.
- **Apply a unified brand to all downtown parking system signage** that can be duplicated throughout all signs, print, and digital materials distributed. The existing signage at the Commercial Street lot incorporates many successful vehicle parking signage components; however, it is not lit up or reflective and does not distinguish the facility’s name. Signage installed along the Freeport Road lots and Merchant lot should mirror the existing branding to create a cohesive parking system.
- **Update the borough website to include a parking homepage.** Residents and visitors alike should be able to easily navigate to a single landing page to learn about parking locations, including a map, parking rates, enforcement hours, residential and commercial permits, special events, and parking tickets.
- **Coordinate with the Chamber of Commerce and outside entities to formalize and promote parking options.** As the borough’s economic partner, the Chamber is an additional resource for businesses and visitors alike to learn more about the parking and transportation options available in Aspinwall.
- **Develop and launch an ongoing parking-related communications and marketing campaign** to educate the community about the existing parking system's opportunities and constraints.
- Communication and transparency are essential to cultivating a good relationship between any public entity and its constituents. As policies and practices recommended in this report are implemented, it is important to share updates with the community by **publishing an annual parking system report.**

Curb Management

- **Revise the residential parking permit system** to meet the community's localized needs. Walker recommends modifying the boundaries, hours of enforcement, and visitor time limits in the residential zones, charging for permits, and/or restricting the number of permits per household. Adopting new technology to manage and enforce the residential permit program is also recommended.
- Like many communities, Aspinwall allows for the designation of on-street spaces for ADA parking. However, stakeholders expressed concern about the guidelines around the practice. Walker

recommends the borough **adopt a guide for designating and monitoring ADA spaces in residential neighborhoods** that clearly outlines the criteria for granting an ADA on-street space and publish this information on the website.

- New development and other public utility projects are opportunities to reassess on-street parking within the borough. While existing on-street parking has been maximized with parallel parking as it exists today, the borough should continue to look for opportunities to improve access by **adopting a guide for restriping/reconfiguring on-street parking**. The guide should also include standards for clear parking zones.

Parking Management

- **Introduce a St. Scholastica parking permit** in coordination with the changes to the residential permit program to manage on-street parking in the neighborhood around the school.
- How a visitor pays for metered parking (coin or mobile app) impacts the hourly parking rate. Walker recommends **updating the metered parking rates** so that the rate paid at the meter aligns with the rate charged through the ParkMobile app. The meter rate for both on- and off-street spaces should be standardized to \$1 per hour.
- Policies that cannot be or are not enforced have little value. The success of any parking policy should **emphasize consistent and fair enforcement**. The borough's recent purchase of a mobile license plate recognition system, paired with a virtual permit management system and ParkMobile, should significantly improve the police department's efficiency and effectiveness when enforcing parking regulations in residential and commercial districts.
- **Educate, advocate for, and facilitate the development of shared parking agreements between and with local businesses** to increase the available parking supply without building more parking.
- **Review posted time limits** in the residential areas and identify opportunities to extend visitor parking restrictions from one hour to two hours. Maintain resident-only or one-hour restrictions on streets immediately adjacent to major generators but provide more flexibility on less utilized streets.
- The borough should continue to monitor utilization of the parking in the commercial districts and **modify enforcement hours as necessary**. Current utilization suggests evening enforcement is not needed, but a change in the mix of land uses in the commercial district could increase parking demand in the evening in the future.

Zoning Requirements

- The borough zoning ordinance specifies the dimensions of a conventional 90° parking space. Walker recommends **revising the parking geometrics for on- and off-street parking** to include parallel and angled parking.
- As part of a more holistic approach to updating its zoning mandates, Walker recommends **updating the minimum parking requirements for residential uses**. The current requirement of two spaces per dwelling unit should be amended to allow for more flexibility for multi-family, accessory dwelling units, and active senior housing. A ratio based on the number of bedrooms should be adopted.
- The borough should **monitor the need to prohibit/limit the leasing of parking to non-residents** and assess the impact of alternative changes to the zoning ordinance before pursuing this option. Changes to the

existing residential parking permit program and other zoning reforms may address this issue without codifying additional restrictions.

- **Simplify the language in the “Shared Parking” Portion of the Zoning Ordinance.** Walker commends the borough for allowing for shared parking but recommends simply requiring a shared parking study using the Urban Land Institute’s Shared Parking model be submitted. Long-term, the borough could consider eliminating all parking minimums, except for residential, and requiring a shared parking study in its place.

Technology

- The borough is already in the process of **procuring a mobile license plate recognition system for enforcement**. The use of this technology in enforcement is considered an industry best practice and is commended. Any system purchased should integrate with ParkMobile and a virtual permit management system.
- To increase the efficiency of enforcing the residential permit parking program, the borough should **transition to a virtual permit management system**, where a vehicle’s license plate serves as the credential rather than a sticker or hangtag. The virtual permit management system should also be utilized for the Merchant Lot permit, proposed St. Scholastica permit, and Freeport Road permits where possible.
- The borough should also **expand its online permit system** to include all on- and off-street parking permit types, in conjunction with the adoption of mobile enforcement and a virtual permit management system.

Infrastructure Improvement

- To support a more multi-modal environment, the borough should look for opportunities to **add bike lanes and bike racks** within the commercial core. With the utilization of the Allegheny RiverTrail Park poised to bring more visitors to Aspinwall, there is an increased need to accommodate bikers.
- **Consider a structured parking solution for the long term.** Current and future parking demand suggests that a structured parking solution would be premature. Rather than build structured parking, Aspinwall should focus on parking management strategies aimed at balancing parking supply and demand.
- The addition of pickleball courts to the recreational area, coupled with baseball demand and limited residential parking capacity, has created a localized shortage, particularly in the evening. The borough should **consider redesigning the recreational area to add surface parking**. Approximately 66 net spaces could be gained.
- Walker understands the borough is waiting on funding to pursue improvements identified in the 2019 Freeport Road Safety Study. To supplement the recommendations in the report, Walker recommends **redesigning parking along Freeport Road and adding crosswalks**. Specifically, the sidewalk should be shifted to the top of the stall to provide more pedestrian and vehicular traffic separation.

Implementation Plan

The implementation plan included below summarizes the proposed timelines, magnitude costs/staffing needs, required technology, and feasibility of implementation to help the borough prioritize the recommendations included in this report.

Recommendations	Implementation Timeframe	Cost /Staffing	Technology	Revenue Impact	Feasibility
Internal Parking Operations					
Develop a Mission Statement	Near-Term	Existing Staff	None	None	High
Review and Update Written Job Descriptions	Near-to Mid-Term	Existing Staff	None	None	High
Create a Parking Enterprise Fund	Mid-Term	Existing Staff	None	None	Medium
Communications, Marketing, and Wayfinding					
Conduct an Inventory of Existing On-Street Signs and Take Appropriate Action	Near-Term	Existing Staff; Variable, depending on any new signage needed or removal of existing signage	None	Potential Increased Citation	High
Apply Unified City Brand to all Downtown Parking System Signage	Mid-Term	Signage and Installation; Possibly need to engage a signage consultant	None	None	Medium
Update Borough Website to Include Parking Homepage	Near-Term	Variable, depending on whether performed in-house or by 3rd party	Existing Technology	None	High
Coordinate with the Chamber of Commerce and Outside Entities to Formalize and Promote Parking Options	Near-Term	Existing Staff	None	None	Medium
Develop and Launch an Ongoing Parking-Related Communications and Marketing Campaign	Near-Term	Existing Staff	Existing Technology	None	High
Publish Annual Parking System Report	Mid-Term	Existing Staff	None	None	Medium
Curb Management					
Revise the Residential Parking Permit Program	Near-Term	Existing Staff	Existing ToCite Software	Potential Parking Revenue	Medium
Adopt a Guide for Designating and Monitoring ADA Spaces in Residential Neighborhoods	Mid-Term	Existing Staff	None	None	Medium
Adopt a Guide for Restriping/Reconfiguring On-Street Parking	Mid-Term	Existing Staff	None	None	Medium
Parking Management					
Introduce a St. Scholastica Parking Permit	Near-Term	Existing Staff	Existing ToCite Software	Potential Parking Revenue	
Update Metered Parking Rates	Near-Term	Existing Staff	None, unless transitioning to accept credit	Potential Parking Revenue	High
Emphasize Consistent and Fair Parking Enforcement	Near-Term	Existing staff in the near term; Long-term may include investing in a PEO	Mobile LPR system and existing handheld technology	Potential Increased Citation	High
Educate, Advocate for, and Facilitate the Development of Shared Parking Agreements Between and with Location Business	Mid-Term	Existing Staff	None	Potential Parking Revenue; Deferred cost of building additional parking	Medium
Review Time Limits	Near-Term	Existing Staff	None	None	High
Monitor and Modify Hours of Enforcement	Long-Term	Existing staff in the near term; Long-term may include investing in a PEO	None	Potential Parking Revenue	High

Zoning Requirements					
Revise Parking Geometrics for On- and Off-Street Parking	Mid-Term	Existing Staff	None	None	High
Update Minimum Parking Requirements for Residential Uses	Mid-Term	Existing Staff	None	None	High
Monitor Need to Prohibit/Limit the Leasing of Parking to Non-Residents	Long-Term	Existing Staff	None	None	Low
Simplify Language in the "Shared Parking Portion of the Zoning Ordinance	Mid-Term	Existing Staff	None	None	Medium
Technology					
Procure a Mobile License Plate Recognition System for Enforcement - Integrate with UPSafety/T2	Near-Term	Variable, between \$45,000 and \$60,000, plus cost of vehicle; On-going cost of software service agreement	Mobile LPR System	Potential Parking Revenue	Medium
Transition to a Virtual Permit Management System	Near-Term	Existing Staff UPSafety Integration, Variable	Integrate the proposed mobile LPR system with ToCite Software	Potential Parking Revenue	Medium
Expand Online Permit System	Near-Term	Existing Staff Training; Public Awareness Campaign	Existing ToCite Software	Potential Parking Revenue	Medium
Maximize UPSafety Software	Mid-Term	Existing Staff Training and Coordination with T2	Existing ToCite Software	Potential Increased Citation	Medium
Infrastructure Improvements					
Add Bike Lanes/Bike Racks	Mid-to Long-Term	Existing Staff Bike Racks, variable between \$200 and \$500 Bike Lanes, coordination with PennDOT	None	Potential additional tax revenue	Medium
Consider a Structure Parking Solution Long Term	Long-Term	Between \$40,000 and \$45,000 per space	None	Potential Parking Revenue	Low
Consider Redesigning the Recreational Area to Add Surface Parking	Mid-Term	Between \$6,000 and \$8,000 per space	None	None	Low
Redesign Parking Along Freeport Road and Add Crosswalks	Mid-Term	Variable, depending on coordination with PennDOT, civil and traffic consultants, and construction	None	Potential additional tax revenue	Low



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Observation, Input and
Analysis

Observation, Input and Analysis

Introduction

Background

Aspinwall is a walkable community with a small-town feel, friendly neighbors, desirable public amenities, and a growing commercial district. As part of its 2022 Comprehensive Master Plan development, the Borough of Aspinwall held extensive public outreach sessions to gain insight into residential and commercial needs and identify the key issues it would like to address in the next ten years. One of those key issues was “Retooling Policies and Programs” to better align the community’s policies, practices, and regulations with the needs of a changing environment. In addition to amending the borough’s zoning ordinance, the comprehensive plan recommended reviewing and reforming their parking management program, prompting Aspinwall to commission a comprehensive parking study. The study aims to quantify current and future parking needs, identify parking “hot spots,” and discuss opportunities to balance the parking supply and demand in the borough by implementing changes to parking policies and operational practices.

Project Approach and Methodology

There is no such thing as a one-size-fits-all solution for a community. Each neighborhood faces its own unique set of challenges and opportunities, advocates and detractors. Walker’s approach to addressing the issues the Borough of Aspinwall faces begins with listening and gathering qualitative background about the community. This starts during the kick-off meeting with city staff, where the needs, goals, and resources are discussed and continues throughout the project with progress meetings to ensure the project stays on track. Public engagement is also a critical element of the learning process. Walker participated in stakeholder meetings to solicit input from residents, business owners, employees, etc., and issued an electronic survey to business owners. This qualitative information was combined with our quantitative analysis of the parking needs.

The findings of the supply and demand phase of the project are the foundation of the management and operations recommendations. Before identifying opportunities to develop or improve parking or recommend changes to existing parking policies, we must have a solid understanding of existing conditions within the study area. With the community’s assistance, Walker collected occupancy data during the week of October 21, 2024. Five counts on both a weekday and a Saturday were performed. This data was used to establish baseline parking conditions for the study area. Parking was inventoried and tabulated by lot and categorized as on-street, off-street, public, or private for the entire study area.

This information was used to create a model of existing conditions and project potential future parking needs based on known development projects and vacancies provided by the borough. After quantifying current and future conditions in the study area, Walker identified strategies to address the challenges and goals in each neighborhood. These strategies ranged from changes to parking management practices and policies to improvements to neighborhood streetscape. Finally, the recommendations were vetted by borough staff before creating a feasible action plan.

Study Area

The Borough of Aspinwall is a small suburban community approximately eight miles east/northeast of downtown Pittsburgh, PA. The borough is generally bisected into Upper and Lower Aspinwall by Route 28/Allegheny Valley Expressway. There is also a significant grade change between Upper and Lower Aspinwall. Center Avenue and the Virginia Avenue Extension/Lexington Avenue allow traffic to travel below the expressway and connect the neighborhoods. Walker's study area is generally bounded by Guyasuta Road to the north, Virginia Avenue Extension and Delafield Avenue to the east, Freeport Road to the South, and Field Avenue/the Aspinwall Recreational Area to the west. The study area also includes the Aspinwall Riverfront Park south of Freeport Road.

The following figures show the boundaries of Upper and Lower Aspinwall. Walker also designated zones within the study area.

Figure 1: Lower Aspinwall Study Area



Source: Walker Consultants, 2024

The zones in Lower Aspinwall are loosely based on the borough's zoning districts, where Zone B encompasses the commercial zoning districts, Zones C and D are the residential districts, and Zone E is the Park. Upper Aspinwall, also zoned as residential, is designated as Zone A. It is also interesting to note that while Zones C and D are residential, the parcel sizes in Zone C are larger. Residences in Zone C also tend to have a driveway and/or garage.

Figure 2: Upper Aspinwall Study Area



Source: Walker Consultants, 2024

Public Outreach

Public and community engagement was essential to developing a parking management plan for the Borough of Aspinwall. The input received helped guide specific strategies and fostered responsive solutions that better reflected the overall parking vision for downtown Aspinwall.

Stakeholder Interviews

In September 2024, the project team met with identified stakeholders from several organizations and agencies in the borough and residents. Drawing on their own experiences and feedback from their respective organizations, stakeholders discussed what is and isn't working about the parking system in Aspinwall, what they would like to see change, and what those changes may look like.

The participating organizations included:

- Borough Administration
- Borough Council and Mayor
- Borough Engineer
- Public Works
- Chamber of Commerce
- Aspinwall Police
- Allegheny RiverTrail Park

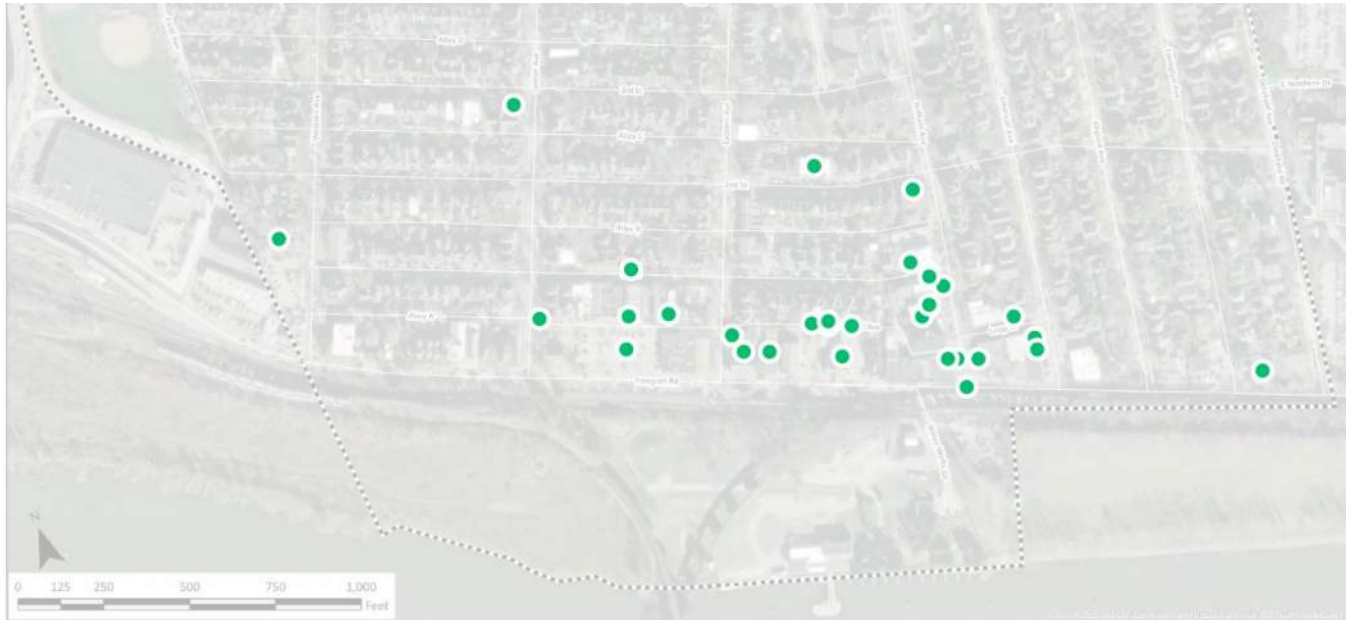
Key takeaways from the interviews include the following:

- Conflicts between residents and businesses using the same on-street spaces, particularly in the transitional neighborhoods between the residential and commercial districts.
- While parking is free after 5:00 pm, visitors are unaware of their options. As a result, they park on-street.
- Conflicts between residents and visitors during baseball games.
- Many residents, particularly in the older part of the borough, don't have private off-street parking.
- Conflicts between residents and hospital visitors utilizing parking along Delafield Avenue.
- Enforcement, or lack thereof, is an issue. Is it the best use of their police force?
- To report a vehicle illegally parking, residents have to call 911.
- Crossing Freeport Road is a significant challenge and a deterrent for using the parking on that side of the road.
- While not frequent, the overflow from significant events at the Allegheny RiverTrail Park puts pressure on the borough's parking system. Utilization of the park is expected to increase over the next few years as the trail connects to a more extensive network.
- Better regulations around the residential on-street ADA application and approval process are needed.
- Rental properties (e.g., single-family homes converted to multi-family) generate more parking demand. While landlords must provide off-street parking, they can also charge. Tenants then park on the street for free rather than rent a space.

Business Owner Survey

In addition to meeting with various residential and commercial community stakeholders, Walker surveyed business owners to understand better how they use the parking system today, when they need parking the most, and where their employees and customers park. As a historic district, many businesses in Aspinwall have limited on-site parking available. When parking is available, it is generally reserved for customers. Both metered and permitted public parking is available to supplement the private parking supply. Employees are encouraged to purchase a monthly parking permit for the Merchant Lot, although some choose to park elsewhere in the borough and risk a citation. A total of 40 business owners responded to the survey, which was open between October 22 and December 9, 2024. The image below shows the general location of the businesses that participated in the survey. Most businesses are located in one of the two commercial districts in Aspinwall; however, there are a few outliers in the more residential areas.

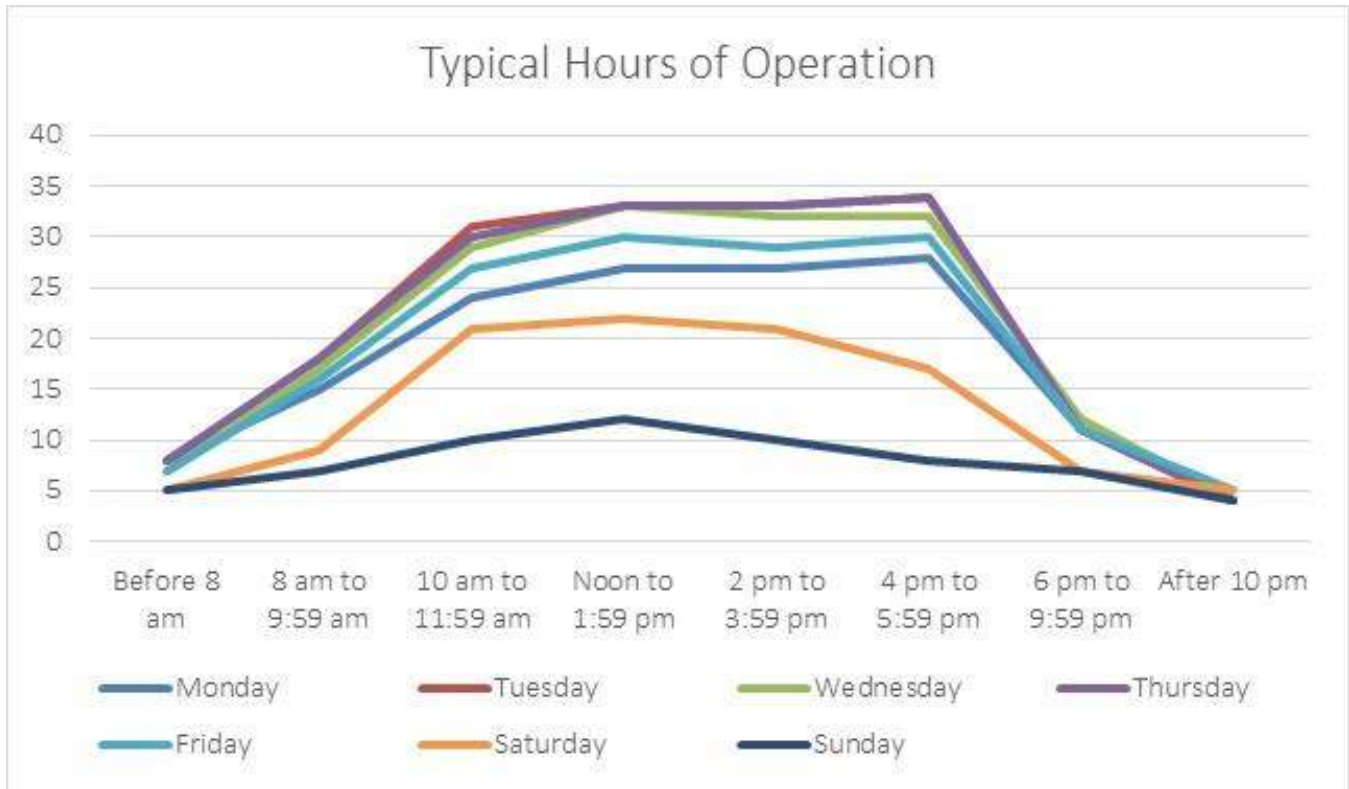
Figure 3: Business Owner Survey Locations



Source: Walker Consultants, 2024

Most of the 40 businesses that responded are open from 8:00 am to 6:00 pm, Monday through Friday. Over a dozen are open after 6:00 pm or before 8:00 am. The figure below shows the typical operating hours by day in Aspinwall. Saturday and Sunday are less busy than weekdays. Between 15 and 20 businesses report being closed on the weekend. Most businesses also report their busiest hours (i.e., when most employees and customers are on site) are between noon and 6:00 pm. These findings align with Walker's observation of parking occupancy in the commercial districts.

Figure 4: Typical Hours of Operation



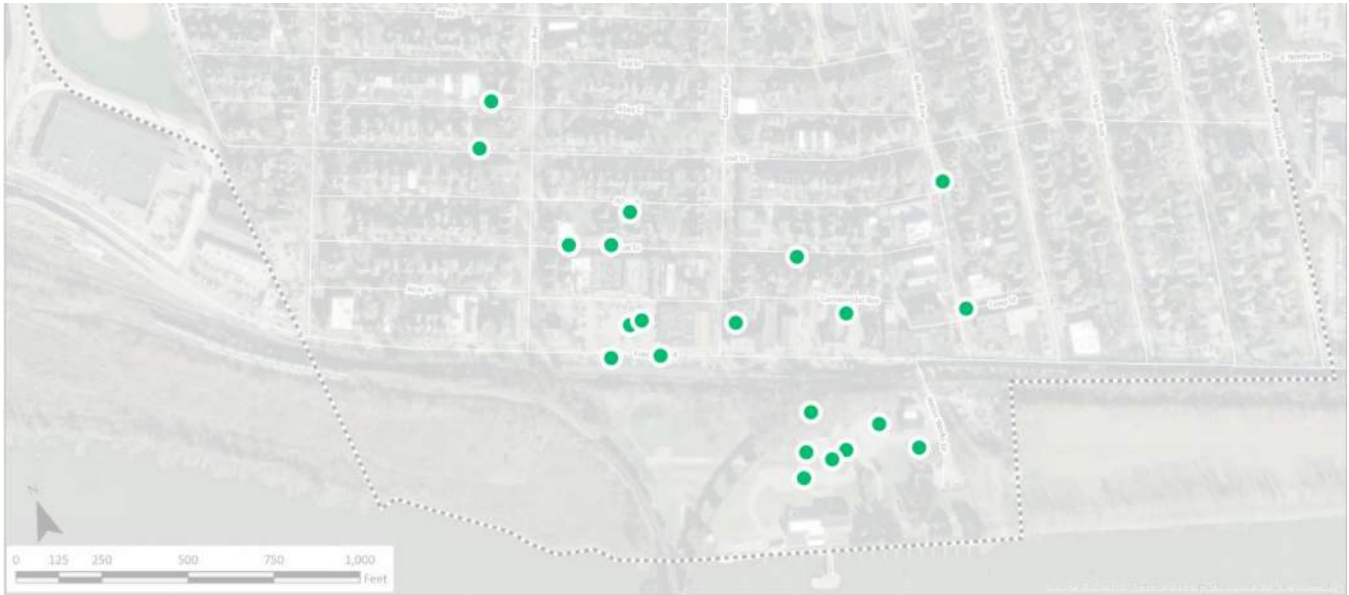
Source: Walker Consultants, 2024

When asked about on-site parking availability for customers or employees, only seven of the 40 respondents indicated they had access to on-site parking. The number of on-site spaces varies from one to 18 spaces; there are about 50 total privately available on-site spaces. Half are reserved for employees, and half are allocated for customers.

By comparison, the same businesses reported 150 employees on-site during a typical busy weekday shift, with only 75 purchasing permits for the Merchant Lot. Accounting for available on-site parking, between 40 and 50 employees either park on-street or in another municipal lot. When asked where employees park if they don't have a permit for the Merchant Lot, business owners identified the following locations on a map of downtown Aspinwall. Some park at the RiverTrail Park or in the Commercial Street and Freeport Road municipal lots. If they park in the Commercial Street or Freeport Road lots, Walker assumes they have a Freeport permit or pay the transient rate.

At least half a dozen on-street locations were identified as possible parking choices, including Brilliant Avenue, Loop Street, and 1st and 2nd Streets. The spaces along Loop and Brilliant are metered, but the spaces on 1st and 2nd Streets are part of the residential permit district. Most are restricted to only residents or allow visitors to park for an hour.

Figure 5: Employee Parking Areas



Source: Walker Consultants, 2024

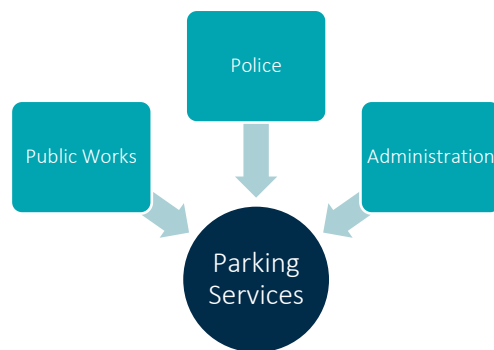
Respondents also reported between 250 and 350 business customers during a busy weekday. Because the timeframe of the “busy” periods in the survey was six hours, it is unlikely that all the customers were downtown at the same time. Additionally, Walker assumes some customers either walked or drove with another person. Assuming 60% of customers parked downtown at any time and 20% walked or drove with another person, the businesses downtown would generate demand for 120 to 168 vehicles. Again, this aligns with Walker’s observations during our site visit.

The full results of the business owner survey are included in the appendix.

Parking Policies and Practices

Organizational Structure

There is no parking authority, parking enterprise, or parking department at the Borough of Aspinwall. Instead, tasks are split between the Public Works Department, the Police Department, and the borough’s administrative office. Public Works is responsible for the maintenance of the meters, annual restriping of on- and off-street spaces, coin collection, and street maintenance (sweeping, leaves, snow). The Police Department is responsible for enforcement, and the administrative office is responsible for issuing parking permits, collecting parking fees and citations, and maintaining associated records.



Parking Regulations

Parking Rates and Time Limits

Aspinwall charges two different rates at their parking meters, depending on whether the fee is paid at the meter or via mobile payment provider ParkMobile. When paying at the meter, parkers pay \$0.50 per hour. The single-space meters also accept nickels (six minutes) and dimes (12 minutes). The meters do not accept credit cards. With the parking app, the parker is charged \$1.00 per hour plus a parking service fee of \$0.30. The service fee is also applied if the parking session is extended. Chapter 15-507 of the borough’s Municipal Code prohibits depositing any additional coin in the meter to extend or increase the parking time beyond the posted legal limit. The table below illustrates the cost differential when paying for two hours of parking at a meter vs. ParkMobile.

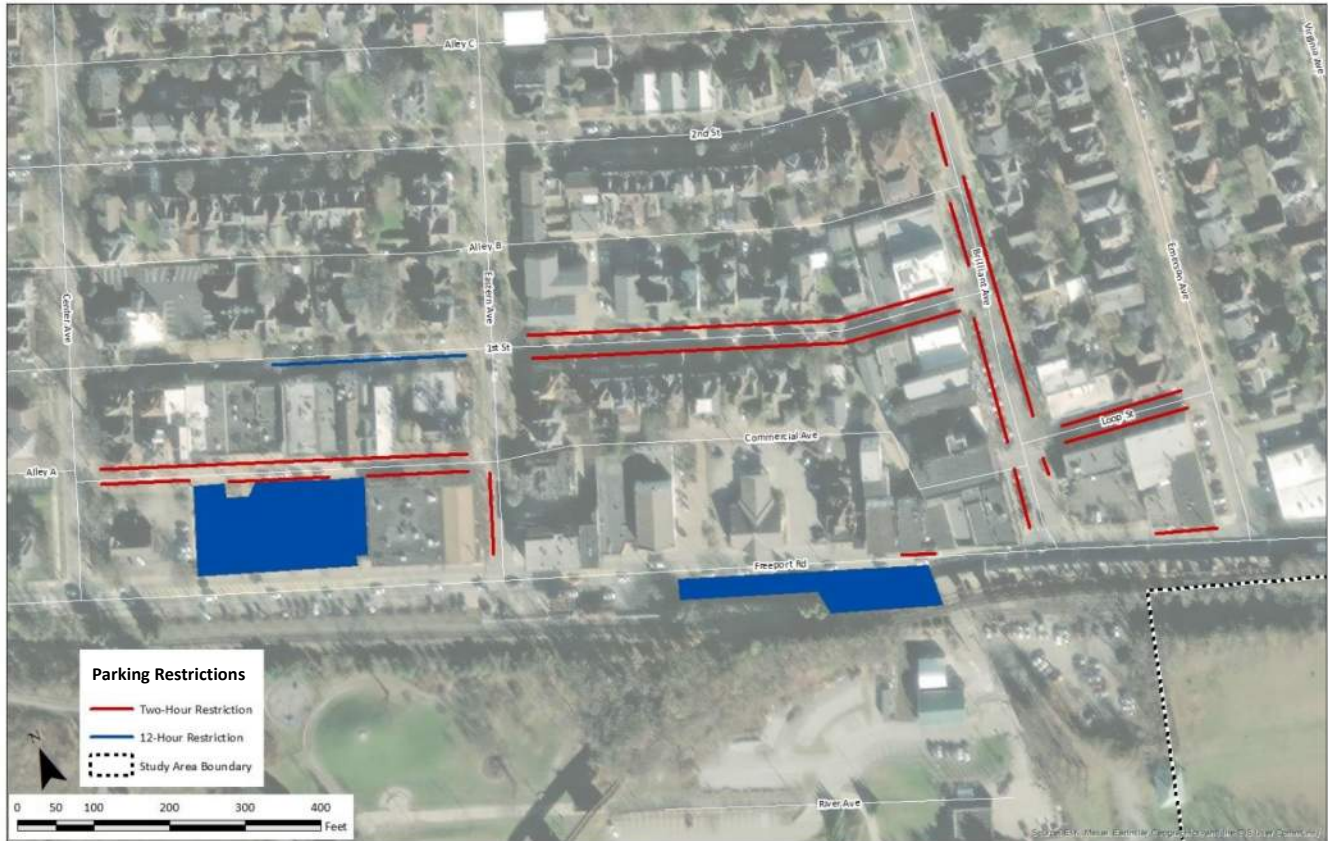
Table 1: Total Metered Parking Cost for Two Hours

	Cash	ParkMobile
Hourly Rate	\$1.00	\$2.00
Additional Fees	\$0.00	\$0.30
Total Costs	\$1.00	\$2.30

Source: Borough of Aspinwall, 2024

There are also two posted time limits at metered spaces on and in the municipal lots. Most on-street metered parking is limited to two hours, except for 1st Street between Center and Eastern Avenues. The metered municipal lots have a 12-hour posted time limit. The map below shows streets with meters with either a two-hour or 12-hour limit. Streets in the residential neighborhood with a one-hour time limit are discussed in the next section.

Figure 6: Parking Time Limits



Source: Walker Consultants, 2024

Residential Parking Permit

The map below shows the streets in Lower Aspinwall with signage indicating where residential parking permits are required. Nearly every street in Lower Aspinwall has either residential-only parking or allows visitors, without a pass, to park for up to an hour. While Walker saw a few posted one-hour time limit signs in alleys, they were not included on the map. Note that the first three spaces on Delafield Avenue, closest to Freeport Road, are designated with a one-hour time restriction in support of local business; the remainder of the street is reserved for residents to protect residents against hospital infringement. Additionally, the 600 block of 4th Street is explicitly reserved for residents of the Lexington Condos. There are no streets in Upper Aspinwall designated as resident-only or one-hour resident-restricted.

Figure 7: Residential Permit Parking



Source: Borough of Aspinwall, 2024

Examples of the residential parking permit signage are shown in the following images.

Figure 8: Sample Residential Permit Parking Signage



Source: Walker Consultants, 2024

Permit parking, specifically resident permit parking, is governed by Chapter 15-409 of the borough's Municipal Ordinance. The ordinance outlines the streets designated as restricted or resident-only parking but does not include any language about the number of permits issued per household or visitor parking passes. While it does include a provision for charging a fee for the permit, the borough does not currently charge residents for the permit.

Based on discussions with borough staff, Walker understands the number of residential permits per household is limited to the number of registered vehicles at each address. A residential permit allows a resident to park in any available space on streets designated as restricted or resident-only. This means a resident from Upper Aspinwall can park on a residential street in Lower Aspinwall and vice versa. Residents must renew their permit annually by coming into the office, presenting their driver's license and other proof of residence, and providing information about their vehicle, such as make, model, and license plate number. The resident permit is a sticker applied to the vehicle's lower front passenger-side window. A new color is selected annually. The car and the associated permit are entered into a database for police and other borough services to reference when in the field. The residential permit parking program does not interface with ParkMobile or the UPSafety database.

There is also a limit of two visitor passes per household, but exceptions exist. Because visitor passes are not dated, they can be used multiple times throughout the year and are generally not returned to the office. The figure to the right shows pictures of the current year's passes.

Figure 9: Residential Parking Permit Sticker and Visitor Pass



Source: Walker Consultants, 2024

Merchant Lot/Employee Parking Permit

The borough leases a lot on the south side of Freeport Road at the entrance to Riverfront Park. This lot can be used by business owners and employees who purchase a Merchant Lot Permit. The permit costs \$125 annually and grants the permit holder access to the lot between 6:00 am and 6:00 pm, Monday through Saturday. Overflow from the Merchant Lot is permitted to park in the upper portion of the Riverfront Park Lot. The permit is a hangtag and is transferable to other vehicles. The figure below shows the Merchant Lot Parking Agreement Form and an example of the hang tag.

Figure 10: Merchant Lot Permit and Agreement



Source: Walker Consultants, 2024

Most spaces along Freeport Road and five spaces in the lot at the corner of 1st Street and Western Avenue require a monthly permit between 6:00 a.m. and 6:00 p.m. Monday through Saturday. These spaces are individually assigned and cost \$125 per year. Businesses can post their own signage to designate the space for customers.

Ramp Parking Permit

There are also approximately 24 spaces below the trestle bridge/ramp along Freeport Road, only available by permit. The annual cost of the permit, which allows for 24/7 access, is \$400. No hangtag or sticker is issued for these spaces. Instead, some business owners purchase permits for several of these spaces to provide customer parking. Businesses can post their own signage in each space to signal business parking to customers. The borough reports no available spots/permits at the time of this report; there is a waiting list.

Zoning Ordinance

Parking Geometrics

Off-street parking regulations are outlined in Chapter 27-409 of the borough's municipal code. The minimum dimensions for conventional parking spaces are 9 feet wide by 18 feet long, while handicap (ADA) spaces are required to be 12.5 feet in width and 20 feet long. An interior driveway and parking aisle's minimum width is 25 feet. No dimensions for angled or parallel parking are provided.

Parking Minimums

The minimum parking requirements are also summarized in Chapter 27-409 and the table below. In addition to the minimum requirements, the borough allows for shared parking. An applicant must prove that the maximum combination of all uses will not require the total accumulative parking spaces required by the code. The Planning Commission must approve the proposal.

Table 2: Aspinwall Municipal Code Minimum Parking Requirements

Use Type	Minimum Required Spaces
Residential	Two spaces per dwelling unit
Commercial	
Automotive Repair	One per 150 square feet of GFA
Bank, Savings & Loan Association	One per 200 square feet of gross floor area (GFA)
Bank, Drive-in	One per 1/4 exterior teller window and four for each interior teller window
Bed-and-Breakfast	One per guest room, plus two additional spaces for the primary residence
Business & Professional Offices (other than medical or dental offices)	One per 300 square feet of GFA
Day Care Center, Pre-Primary School	One per staff member, plus one space per six children
Doctor and Dentist Offices	One per examining room, plus one for each two chairs in the waiting room, plus one per physician and staff member
Eating and Drinking Establishments (sit-down type)	One per four seats at tables and one per two seats at a bar or counter, plus one per two employees
Gasoline Service Station	Two spaces per service bay, plus one per employee
Laundromats	One per three washing or dry cleaning machines (exclusive of dryers)
Medical and Dental Clinic or Laboratory	One per 200 square feet of GFA
Mortuary	One per three seats in any chapel or seating area and not less than five spaces for each viewing area or room
Motel or Hotel	One per guest room plus parking requirements for any restaurant, bar, or other facilities as required by this chapter

Personal Service & Repair Establishment	One per 100 square feet of GFA plus one for each two employees
Private School for Art, Music, Crafts, Dance, Etc.	One per staff member, plus one per three students
All Commercial Uses Not Specifically Listed	One per 200 square feet of GFA
Restaurants (Drive-In or Fast Food)	One per two seats, plus one per employee
Theater	One per four seats
Veterinary Office or Clinic or Hospital	One per 150 square feet of GFA, plus one per staff member
Commercial Recreation	
Bowling Alleys	Four per alley
Swimming Pools and Clubs	One space per 38 square feet of water area
Tennis, Racquetball Courts, etc.	4.5 spaces per count
Other Commercial Recreational Facilities Not Specifically Mentioned	One per 200 square feet of GFA
Industrial	
Manufacturing, Warehouse and Wholesale	One per two employees on the two largest shifts combined
Public Quasi-Public	
Churches	One per three fixed seats, plus one per employee
Elementary, Junior, or Senior High School	Two per classroom plus one for each five students 16 years of age or older
Colleges, Universities, and other Special Institutions	Two per classroom plus one for each five students 16 years of age or older
Hospitals	One and 1/2 per bed plus one for each staff physician and one for each two other employees
Nursing or Convalescent Homes	One per three beds plus one for each two other employees
Private Clubs and Lodges	One per 1.5 members
Public or Nonprofit Recreation	One per four persons of design capacity for the facility
Public Utilities	One per two employees on two largest shifts combined

Source: Aspinwall Municipal Code Chapter 27-409, 2024

Parking for Handicapped Persons

Chapter 15-406.1 of the municipal code governs the installation of designated handicapped parking spaces and signage on residential streets. The handicapped sign committee is comprised of three Borough Council public safety committee members, the Borough Manager, and the Chief of Police. It requires an annual application to erect signage designating a handicapped space near a person's home. If the application is not received in a timely manner, the signage expires. It can be renewed at a later date upon the committee's convening. The vehicle must be registered to the disabled resident and driven by the individual or a family member residing at the same address. The committee considers the health, safety, and welfare of the borough when granting new or renewing existing applications for signage. The signage is to be removed if conditions change.

The map below shows the location of current on-street ADA parking spaces within the residential neighborhood. While not shown, one ADA space is designated on 10th Street in Upper Aspinwall. Additionally, the map does not specify where the ADA spaces are located on the block face, just the quantity of spaces.

Figure 11: ADA On-Street Parking Locations and Quantities



Source: Walker Consultants, 2024

Enforcement

On- and off-street parking enforcement is performed by the Aspinwall Police Department. While the residential-only and one-hour time limit restrictions are enforced 24/7, metered parking is only enforced between 9:00 am and 5:00 pm, Monday through Saturday. Enforcement, particularly in the evenings, is a secondary responsibility to maintaining the safety and security of the community. It is also common for residents to self-report violations by calling 911. An officer is then deployed to the location to issue a citation or “start the clock” on a potential time violation.

Police use T2 handheld devices, which utilize the UPSafety mobile enforcement platform. The software allows for electronic tire chalking to monitor timed zones. Police also utilize the ParkMobile mobile payment app to monitor metered parking spaces on-street and in the public lot. The Merchant Lot and other permitted parking areas are generally self-monitored, with police being called only when a violation occurs.

The contract for UPSafety (a T2 Company) is a Software as a Service (SaaS) agreement and purchase agreement for the hardware. It is dated March 2022 and has a term of three years with automatic one-year renewals. Either party may cancel the contract with 60 days notice prior to the renewal period. If the hardware and training costs are paid, either party may terminate with 60 days' notice.

Services fees are billed monthly, subject to increases after the initial term and each renewal period, not to exceed the Consumer Price Index. The quoted cost for the initial three-year period was just under \$30,000. Annual SaaS and Verizon data plan fees during this period are \$7,176. This does not include monthly fees for credit card payment processing, online citation payment fees (paid by the user), and supplies. The terms and fees are in line with similar offerings. There are capabilities within the system that are not being used that may be implemented to benefit the borough further. These are reviewed later in the report.

Citations

Chapters 15-411 and 15-510 of the Aspinwall Municipal Code address parking fines. The table below details the penalties associated with each violation. The code allows for the repeated ticketing of a vehicle in violation of the posted two-hour time limit of up to \$50 per day. Walker understands the borough recently increased several of their violations to \$50. After 30 days, the fines increase.

Table 3: Aspinwall Parking Fines

Violation	Fine	Violation	Fine
Expired Meter	\$10	Obstruction of Hydrant Access	\$50
Over One Foot from Curb	\$5	Obstruction of Driveway	\$50
Occupying Two Spaces	\$10	Trucks, Trailers, Or Commercial Vehicles	\$50
Street Sweeping Zone	\$10	No Parking Sign	\$50
Blocking Sidewalk/Crosswalk/Handicap Ramp	\$15	Resident Parking Only Sign	\$50
Blocking Intersection	\$15	One-Hour Parking Sign	\$50
Fire Station Driveway	\$50	Merchant Lot/RAMP Parking Only	\$50
Private Property	\$15	Handicapped Posted Space	\$100
Facing Wrong Way	\$15	Permit Parking Only	\$50
Obstruction of Vehicle Traffic	\$50	Yellow Safety Zone	\$50

Source: Borough of Aspinwall, 2024

Citations may be paid in person, dropped off, or paid online through a patron portal provided by the UPSafety system. When paying online, users can review the citation, view photos, and contest the citation. A convenience fee is charged per the UPSafety contract. It is currently listed as 4% of the citation or \$3.00, whichever is greater. This fee goes to UPSafety.

Technology

Parking is paid for at a single space meter using coins, a mobile app, or a text message to pay with a credit card.

Meters

The borough utilizes single-space pole-mounted meters for coin payment. The meters feature Mackay electronic battery-powered internal mechanisms that activate and display the remaining parking time for visual monitoring. Nickels, Dimes, and Quarters are accepted. Each meter includes an advertisement for the ParkMobile payment option. Meter housings are worn but serviceable, and the clear domes observed were in good condition.

Figure 12: Single Space Parking Meter



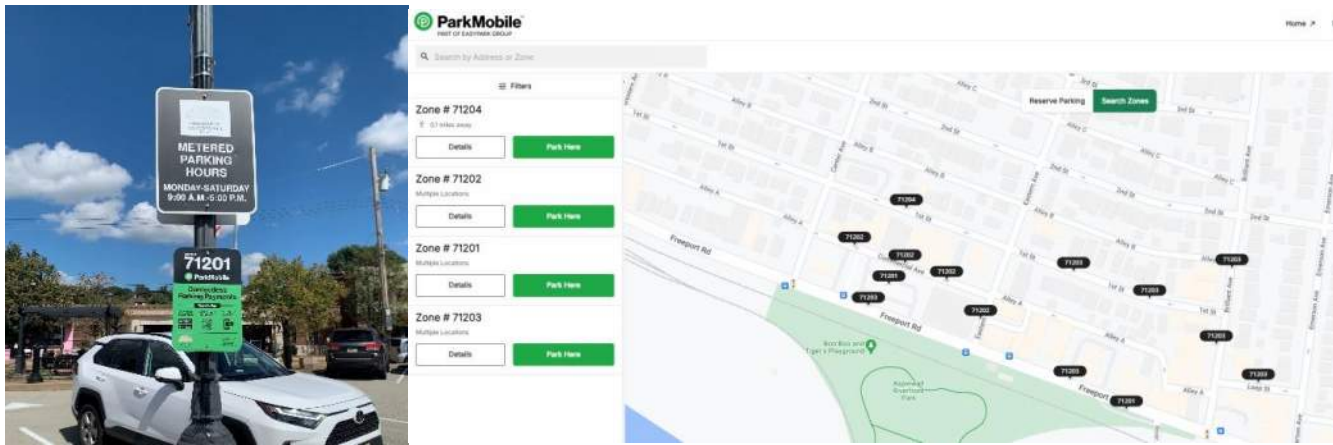
Sample photos of a dual and single-mounted meter

Source: Walker Consultants, 2024

ParkMobile

Aspinwall expanded their parking payment options to include ParkMobile in 2022, creating four different zones within the commercial district. The municipal lot on Commercial Avenue and the spaces near River Ave/Freeport Road are assigned to a specific zone, while on-street parking utilizes three different zones. Like many communities, the borough opted not to brand their ParkMobile service. A sample of the signage posted in the Commercial Street Lot is shown in the figure below. Stickers at each meter explain the ParkMobile options for payment, which include an app, scanning a barcode, and text to pay.

Figure 13: ParkMobile Signage



Source: Walker Consultants, 2024

The contract between Aspinwall and ParkMobile is for three years, expiring in 2025. The agreement will automatically be renewed for one year unless a 60-day written cancellation notice is received. Aspinwall fees are \$0.15 per transaction plus 3% of the transaction. User fees are \$0.30 per transaction. The agreement indicates that the client data remains the sole and exclusive property of Aspinwall, with ParkMobile granted a perpetual, irrevocable, royalty-free license to use the data in connection with the services provided. This is a typical ParkMobile contract with fees that align with those of other municipalities.

EV Charging

The borough recently installed electric vehicle (EV) charging stations on the municipal lot on Commercial Street. Three Flo charging stations, each with two charge points, are available. Charging rates between 8:00 am and 8:00 pm are \$2/hour for the first two hours and \$5/hour for each additional hour. Between 8:00 pm and 8:00 am, The rate is a flat \$2/hour. Though not well signed, Walker understands that parkers must also pay the posted rates using the ParkMobile app; there are no meters in these spaces.

Figure 14: EV Charging Stations

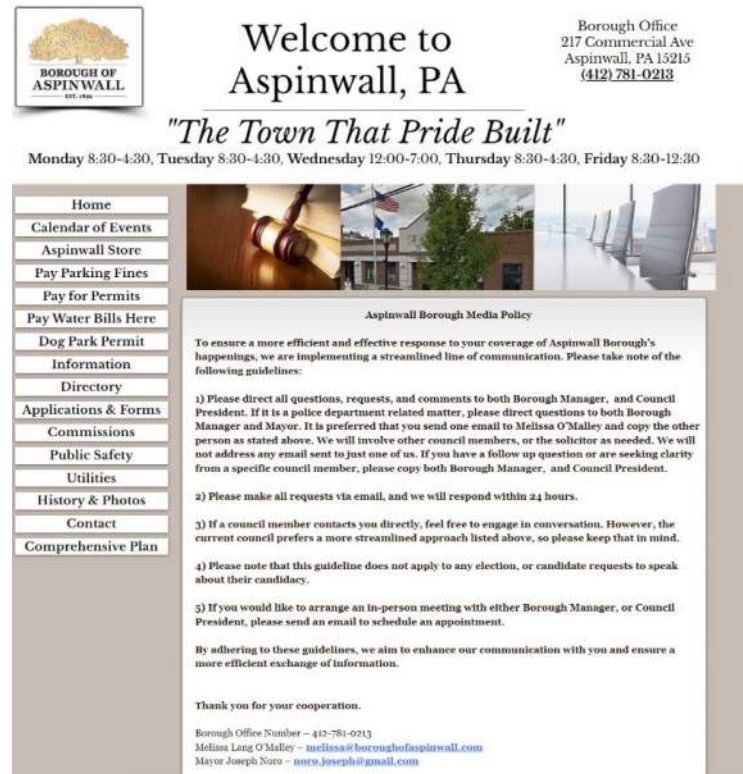


Source: Walker Consultants, 2024

Parking Website

The borough's homepage has buttons/links to either pay a parking fine or buy a permit; however, it is unclear whether this is parking related. Clicking either link takes the user to the same website (ToCite). Multiple permit options are available, including parking permits for the Merchant Lot. The borough does not have a page specific to parking services that summarizes meter rates, public on- and off-street parking locations, or information about the residential parking permit program. From the "Applications and Forms" link, residents can access the Handicap Parking Request form and the Block Party Application.

Figure 15: Aspinwall Website Homepage



Source: Borough of Aspinwall, 2024

Curb Management

Loading Zones/Reserved Parking

A limited amount of curb space is designated for loading within the Borough of Aspinwall. The following map shows the location of such space. Walker noted two commercial loading zone spaces on 1st Street and approximately three spaces on Commercial Street reserved for police. Five spaces on the north side of 1st Street are also reserved for the fire department.

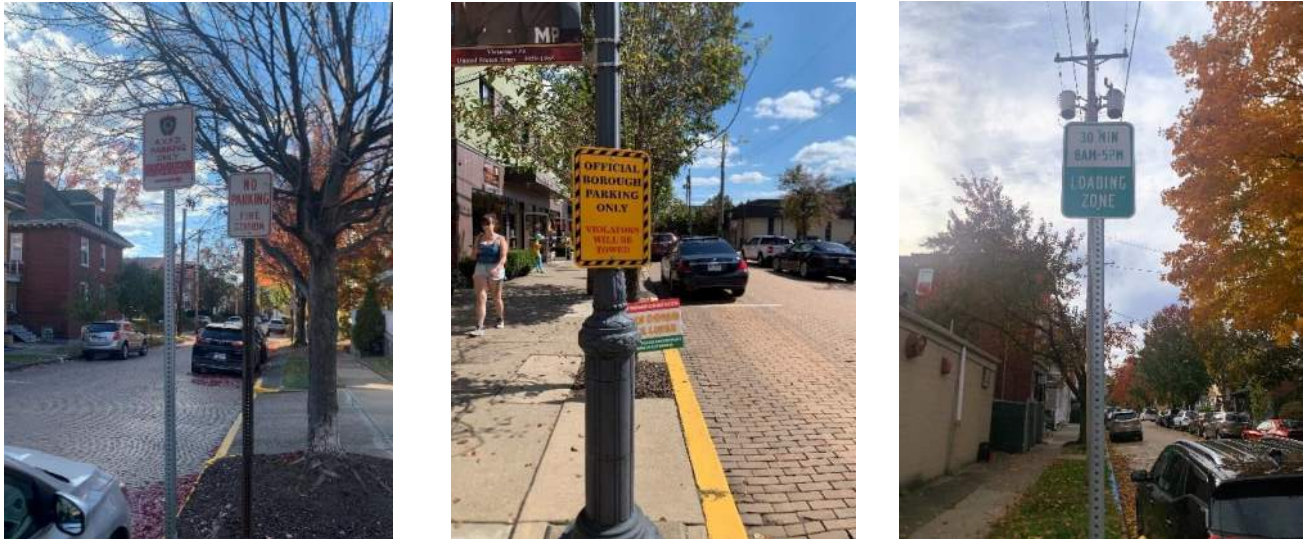
Figure 16: On-Street Loading and Reserved Parking Zone Locations



Source: Walker Consultants, 2024

Walker noted each location on the map and included photos of the signage posted at each location.

Figure 17: On-Street Loading and Reserved Parking Zone Signage



Street Maintenance/Cleaning

Between April 1st and December 15th, the borough enforces a street maintenance program that takes select on-street spaces offline for a few hours a week. Signage is posted on each street indicating the day(s) and times of the closure. Public Works uses this time to clear leaves, perform general street/curb maintenance, operate the street sweeper, etc. A police officer patrols the area ahead of Public Works, issuing tickets to any vehicles that have yet to move during the designated times. During the restricted time, vehicles can park on the opposite side of the street, even if the street isn't striped for parking (see figure to the right, for example).

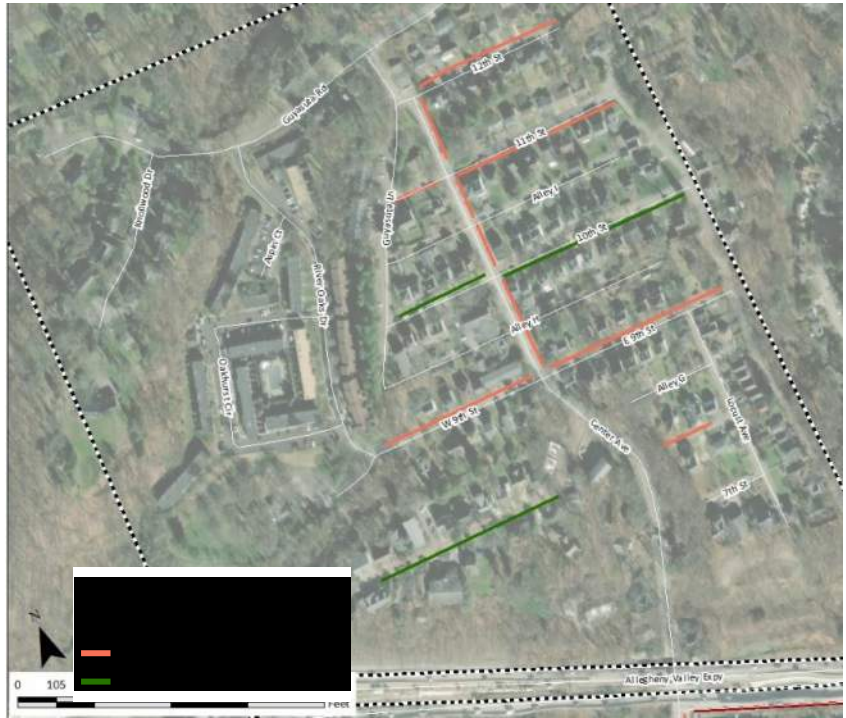
Figure 18: On-Street Parking During Maintenance Hours



Source: Walker Consultants, 2024

The maps to the right and on the next page summarize the street maintenance hours within the borough. As a state road, Freeport Road is not maintained by the borough. Some streets, like Guyasuta Road/Lane and Knollwood Drive, have less formal schedules.

Figure 19: Street Maintenance Locations – Upper Aspinwall



Source: Walker Consultants, 2024

Figure 20: Street Maintenance Locations – Lower Aspinwall



Source: Walker Consultants, 2024

School Zones

A school zone was established on Third Street, between Maple Avenue and Brilliant Avenue, between noon and 3:00 pm on school days as a play street. There is also no parking on the western side of Brilliant Avenue between 3rd and 4th Streets between 2:00 and 3:00 pm on school days, as shown in the image to the right.

Figure 21: School Zone No Parking Signage



Source: Walker Consultants, 2024

Existing Conditions

Parking Supply

There are approximately 2,394 parking spaces within the study area, including 1,385 on-street parking spaces and 1,009 off-street parking spaces. Off-street spaces are categorized as commercial, residential, and public. Commercial off-street parking is privately owned and allocated for a specific business, while residential, also privately owned, is reserved for a particular apartment complex. Walker did not include residential driveways or parking lots smaller than five spaces in the analysis. Public off-street parking includes metered and permitted parking spaces and the spaces at the three recreational areas in the study area.

Table 4: Parking Supply Summary

Zone	Commercial Off-Street	Residential Off-Street	Public Off-Street	On-Street	Total
A	0	230	22	188	440
B	205	30	159	129	523
C	0	39	0	402	441
D	54	65	63	666	848
E	90	0	52	0	142
Total	349	364	296	1,385	2,394

Source: Walker Consultants, 2024

The pie charts illustrate the distribution of the parking supply within the borough. For example, Zone E (Riverfront Park) contains about 6% of the available parking supply, while Zone D (residential) contains about 35%. On-street parking accounts for approximately 58% of the total parking available within the study area. Of the more than 1,000 off-street parking spaces, the borough controls approximately 29%, while the remaining 71% are split between privately owned commercial businesses and privately owned residential complexes.

Figure 22: Parking Supply Characteristics



Source: Walker Consultants, 2024

There are also several different types of on-street parking within the study area. Many streets within the borough are restricted to residents or only allow visitors to park for one hour. Spaces with these designations account for nearly 60% of the on-street parking supply. Metered parking is primarily restricted to Zone B or streets directly bordering Zone B, such as 1st Street or Brilliant Avenue.

Table 5: On-Street Parking Supply Summary

Zone	Total On-Street Supply	Residential Only	Residential 1 Hour Limit	No Restrictions	ADA	Metered	Other
A	188	32	0	154	1	0	1
B	129	20	0	0	3	97	9
C	402	59	226	102	8	0	7
D	666	23	455	155	18	14	1
E	0	0	0	0	0	0	0
Total	1,385	134	681	411	30	111	18

Source: Walker Consultants, 2024

A handful of spaces within the study area are allocated to another use, such as loading, or are reserved for a specific user, such as the police, fire, or Lexington Condos.

Parking Occupancy

Due to the physical characteristics of the study area, Walker analyzed parking occupancy in Upper Aspinwall and Lower Aspinwall separately. A detailed summary of parking occupancy by lot/street is provided in the appendix, while the tables below summarize Walker's observations by zone. During our survey, portions of Lexington, Virginia, and Emerson Avenues were under construction, which may have impacted utilization during the daytime occupancy counts. However, it is also important to note that many of the residences on these streets also have access to private driveways.

Weekday

Walker conducted parking occupancy counts in the study area on Thursday, October 24, 2024. Five counts were performed over 12 hours, with the first count starting at 9:00 am and the last at 8:00 pm. The day was judged to represent typical business conditions during most counts. However, due to the seasonality associated with some restaurants in the area, less typical activity was observed (primarily around Commercial Street and Eastern Avenue.) In the next section, Walker considered the seasonal impact of outdoor seating on parking demand in the study area.

Upper Aspinwall

Peak parking occupancy in Upper Aspinwall occurred during the 8:00 pm count, with approximately 190 spaces, or 43% of the available parking supply, utilized.

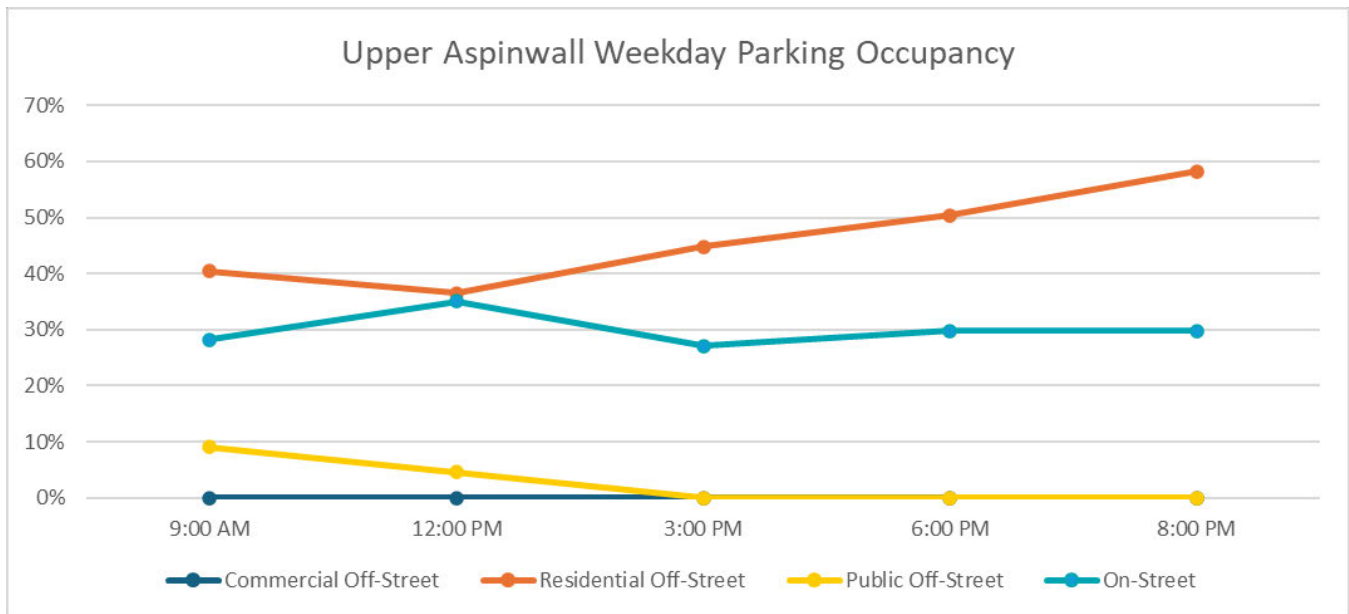
Table 6: Upper Aspinwall Weekday Parking Occupancy Summary

Type	Supply	9:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM
Commercial Off-Street	0	0	0	0	0	0
Residential Off-Street	230	93	84	103	116	134
Public Off-Street	22	2	1	0	0	0
On-Street	188	53	66	51	56	56
Total	440	148	151	154	172	190
Occupancy		34%	34%	35%	39%	43%

Source: Walker Consultants, 2024

Most of the parking in Upper Aspinwall is residential, aligning with the peak activity seen during the 8:00 pm count. On-street parking was about 30% occupied most of the day, while the River Oaks apartment complex was 60% utilized during the peak hour. The following figure shows the parking occupancy rate by type in Upper Aspinwall on a weekday.

Figure 23: Upper Aspinwall Weekday Occupancy by Type



Source: Walker Consultants, 2024

Lower Aspinwall

During the weekday survey, peak parking occupancy in Lower Aspinwall occurred during the 6:00 pm count, with about 47% of the available parking supply utilized. Walker noted a 6:00 pm little league game at the recreational area, but no other community events occurred during the survey.

Table 7: Lower Aspinwall Weekday Parking Occupancy Summary

Type	Supply	9:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM
Commercial Off-Street	349	106	141	144	92	36
Residential Off-Street	134	56	45	48	65	70
Public Off-Street	274	102	150	137	131	55
On-Street	1,197	532	545	520	621	639
Total	1,954	796	881	849	909	800
Occupancy		41%	45%	43%	47%	41%

Source: Walker Consultants, 2024

Walker also analyzed weekday parking in each zone in Lower Aspinwall. Peak parking conditions varied on a zonal basis. For example, peak conditions in Zone B (commercial districts) occurred during the noon count, while Zones C and D (residential) peaked during the 8:00 pm count.

Overall, current occupancy rates do not indicate a parking shortage; however, there are a few “hot spots” of activity where occupancy rates on certain blocks or for a specific facility exceed 85 percent of capacity. When occupancy exceeds this level, patrons may experience delays and frustration while searching for a space.

Therefore, the parking supply may be perceived as inadequate even though some spaces are available in the parking system.

Table 8: Lower Aspinwall Weekday Parking Occupancy Summary by Zone

Zone	Type	Supply	9:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM
B	Commercial Off-Street	205	34%	51%	47%	31%	15%
	Residential Off-Street	30	43%	33%	47%	33%	33%
	Public Off-Street	159	26%	54%	46%	48%	20%
	On-Street	129	38%	78%	53%	62%	40%
	Zone Total	523	33%	57%	48%	44%	24%
C	Commercial Off-Street	0	0%	0%	0%	0%	0%
	Residential Off-Street	39	54%	33%	46%	67%	64%
	Public Off-Street	0	0%	0%	0%	0%	0%
	On-Street	402	41%	36%	40%	43%	46%
	Zone Total	441	42%	36%	40%	45%	48%
D	Commercial Off-Street	54	22%	24%	28%	15%	7%
	Residential Off-Street	65	34%	34%	25%	45%	54%
	Public Off-Street	63	40%	35%	37%	71%	37%
	On-Street	666	48%	45%	44%	55%	60%
	Zone Total	848	44%	42%	41%	53%	55%
E	Commercial Off-Street	90	27%	27%	37%	23%	1%
	Residential Off-Street	0	0%	0%	0%	0%	0%
	Public Off-Street	52	67%	81%	79%	19%	0%
	On-Street	0	0%	0%	0%	0%	0%
	Zone Total	142	42%	46%	52%	22%	1%

Source: Walker Consultants, 2024

The following map identifies parking usage patterns and provides insights into areas requiring additional parking solutions or management policies. All parking lots and on-street parking spaces are shaded in different colors based on their observed parking occupancy levels, visually representing where parking demand is higher or lower. The following color scheme indicates the color-coded occupancy levels:

- Green:** Parking occupancy is less than 50%.
- Yellow:** Parking occupancy ranges from 50% to 64.99%.
- Orange:** Parking occupancy is between 65% and 84.99%.
- Red:** Parking occupancy is 85% or greater.

About 24 block faces within Lower Aspinwall experienced parking occupancy rates at or above 85% of capacity; almost all are blocks in the older part of the community where parcels are smaller, and there is less access to driveways, garages, or residential parking pads.

Figure 24: Lower Aspinwall Peak Parking Occupancy (6:00 pm)



Source: Walker Consultants, 2024

Weekend

Five counts during a Saturday survey were completed on October 26, 2024. The first count started at 10:00 am and the last at 8:00 pm. Like the weekday survey, activity in the study area was judged to represent typical busy conditions with some exceptions. Due to the cooler temperatures, outdoor seating could have been more heavily utilized, potentially impacting parking activity in Zone B. In the next section, Walker considered the seasonal impact of outdoor seating on parking demand in the study area.

Upper Aspinwall

During the Saturday survey in Upper Aspinwall, peak parking occupancy occurred during the 6:00 pm count, with approximately 190 spaces, or 43% of the available parking supply, utilized. Walker observed a Trunk or Treat event at River Oaks earlier in the day, potentially increasing parking occupancy during those counts.

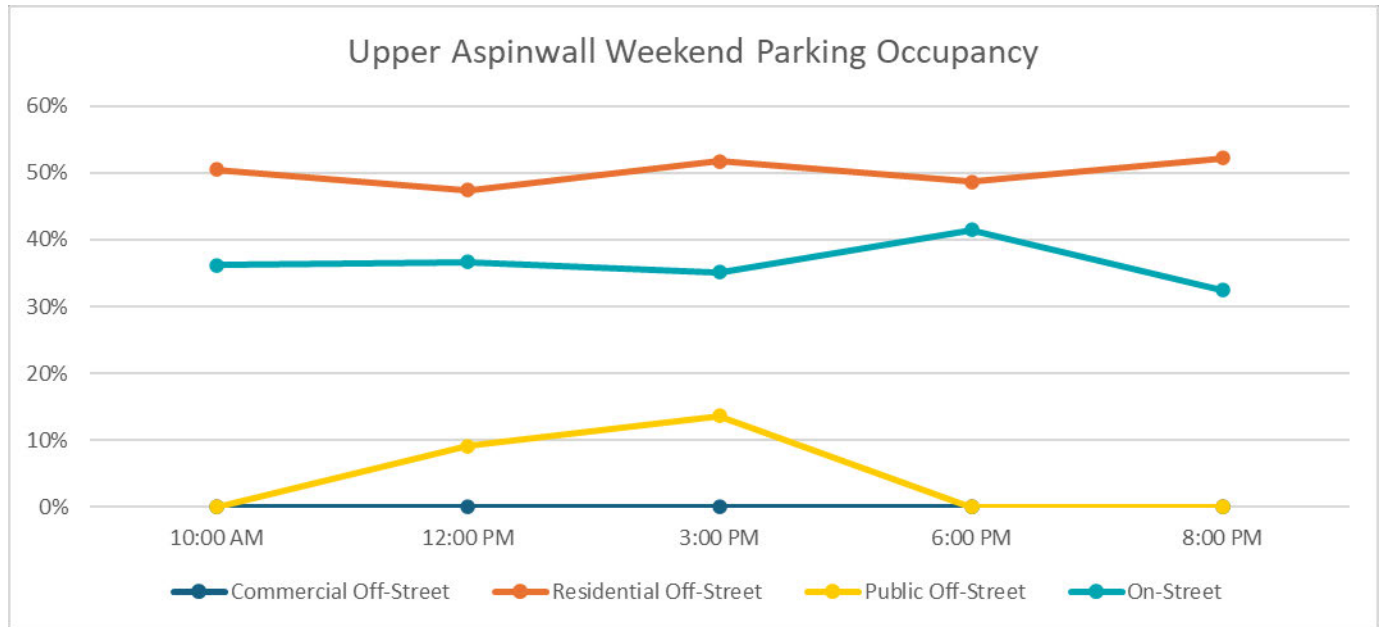
Table 9: Upper Aspinwall Weekday Parking Occupancy Summary

Type	Supply	10:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM
Commercial Off-Street	0	0	0	0	0	0
Residential Off-Street	230	116	109	119	112	120
Public Off-Street	22	0	2	3	0	0
On-Street	188	68	69	66	78	61
Total	440	184	180	188	190	181
Occupancy		42%	41%	43%	43%	41%

Source: Walker Consultants, 2024

The following figure shows the parking occupancy rate by type in Upper Aspinwall during the Saturday survey. While current occupancy rates in Upper Aspinwall don't indicate a parking shortage overall, there were a few "hotspots" where occupancy levels exceeded 85% of capacity. These generally occur where residents cannot access off-street parking in a driveway, garage, or residential parking pad.

Figure 25: Upper Aspinwall Weekend Occupancy by Type



Source: Walker Consultants, 2024

Lower Aspinwall

During the Saturday survey, peak parking occupancy in Lower Aspinwall occurred during the noon count, with about 900 occupied spaces or 46% of the available parking supply utilized. No community events were noted during the Saturday survey in Lower Aspinwall.

Table 10: Lower Aspinwall Weekday Parking Occupancy Summary

Type	Supply	10:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM
Commercial Off-Street	349	121	132	106	69	63
Residential Off-Street	134	58	51	56	64	69
Public Off-Street	274	72	115	86	81	60
On-Street	1,197	594	603	616	624	672
Total	1,954	845	901	864	838	864
Occupancy		43%	46%	44%	43%	44%

Source: Walker Consultants, 2024

The following table summarizes weekend parking occupancy by zone. Like the weekday survey, peak parking occupancy in Zone B (commercial district) peaked during the noon count; however, it was also significantly less busy throughout the day. There was also no increase in activity during the dinnertime count. Activity in the residential areas of Zones C and D was similar on both the weekday and Saturday surveys. Zone E, specifically Riverfront Park, was also busier during the weekend, even during the later counts.

Table 11: Lower Aspinwall Weekday Parking Occupancy Summary by Zone

Zone	Type	Supply	10:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM
B	Commercial Off-Street	205	38%	38%	29%	10%	12%
	Residential Off-Street	30	30%	37%	33%	40%	40%
	Public Off-Street	159	22%	48%	33%	32%	19%
	On-Street	129	60%	63%	53%	42%	38%
	Zone Total	523	38%	47%	37%	26%	22%
C	Commercial Off-Street	0	0%	0%	0%	0%	0%
	Residential Off-Street	39	69%	49%	46%	64%	74%
	Public Off-Street	0	0%	0%	0%	0%	0%
	On-Street	402	38%	43%	43%	44%	47%
	Zone Total	441	41%	44%	43%	46%	49%
D	Commercial Off-Street	54	19%	22%	17%	20%	19%
	Residential Off-Street	65	34%	32%	43%	42%	43%
	Public Off-Street	63	35%	40%	40%	46%	44%
	On-Street	666	55%	52%	56%	59%	65%
	Zone Total	848	49%	48%	52%	54%	59%
E	Commercial Off-Street	90	38%	47%	41%	42%	32%
	Residential Off-Street	0	0%	0%	0%	0%	0%
	Public Off-Street	52	29%	27%	17%	2%	2%
	On-Street	0	0%	0%	0%	0%	0%
	Zone Total	142	35%	39%	32%	27%	21%

Source: Walker Consultants, 2024

Like weekday conditions, current occupancy rates during the Saturday survey do not indicate a shortage of parking; however, there are a few “hot spots” of activity where occupancy rates on certain blocks or for a specific facility exceeded 85 percent of capacity. When occupancy exceeds this level, patrons may experience delays and frustration while searching for a space. Therefore, the parking supply may be perceived as inadequate even though some spaces are available in the parking system. These areas of high activity are highlighted in red on the map below. Conversely, areas of low activity (less than 50%) are highlighted in green.

During the noon peak, about ten block faces within Lower Aspinwall experienced parking occupancy rates at or above 85% of capacity. The 8:00 pm occupancy map of Lower Aspinwall is also shown below for comparison (Figure 27). On Saturday evening, occupancy rates exceeded 85% capacity on more than 20 block faces. Most of these streets are in the oldest parts of Aspinwall between Field Avenue and Eastern Avenue, where parcel sizes are smaller, and there is less off-street parking behind residents' houses.

Figure 26: Lower Aspinwall Peak Parking Occupancy (12:00 pm)



Source: Walker Consultants, 2024

Figure 27: Lower Aspinwall 8:00 pm Parking Occupancy



Source: Walker Consultants, 2024

Seasonal Impacts

Walker's survey of existing conditions was completed at the end of October. As a result, the weather may have impacted the demand generated by restaurants with outdoor seating, particularly in the evening hours when the temperature was below 50 degrees. Walker identified three restaurants with significant outdoor seating – the Cornerstone, Luke & Mike's, and the Spice Affair – and measured their outdoor seating areas using Google Earth. While the Vibrant Sunshine Juicery Café also has outdoor seating, it is only open during daytime hours. Additionally, the utilization of the baseball fields significantly impacts the availability of parking along Field Avenue and the streets immediately adjacent. By the end of October, the season is generally over. Walker understands at least one field was used during the Thursday survey, but no games were scheduled for the Saturday survey.

To model the impact of the restaurants and the baseball fields, Walker used two approaches, layering the additional demand on top of the parking activity observed during our site visit. For the restaurants, Walker used the parking demand ratios for fine/casual dining space recommended by the Urban Land Institute's *Shared Parking*, adjusted for time of day, time of year, and a modal factor. The recommended base parking ratio for restaurant space is 15.50 spaces per 1,000 SF on a weekday and 17.75 spaces per 1,000 SF on a weekend. These ratios were adjusted to model expected parking demand around 6:00 pm in July or August. Walker also assumed that about 94% of customers and employees would drive or carpool to the restaurant, with the remaining 6% walking, biking, or taking Uber/Lyft. At 6:00 pm, the outdoor seating at these three restaurants is expected to generate demand for between 27 and 31 additional spaces. The additional demand generated by Cornerstone and Luke & Mike's would likely park in the Municipal Lot on Commercial Street. The additional demand generated by the Spice Affair was assumed to park on-street.

Table 12: Outdoor Restaurant Space Seasonal Parking Impact

Business	Outdoor Sq Ft	Weekday Base Parking Ratio	Saturday Base Parking Ratio	TOD Adj.	Monthly Adj.	Modal Adj.	Weekday Parking Demand	Saturday Parking Demand
Cornerstone	500	15.5 /KSF	17.75 /KSF	95%	96%	94%	7	8
Luke & Mike's	1,000	15.5 /KSF	17.75 /KSF	95%	96%	94%	13	15
Spice Affair	500	15.5 /KSF	17.75 /KSF	95%	96%	94%	7	8
Total	2,000						27	31

Source: Walker Consultants, 2024

Walker relied on anecdotal feedback about typical utilization for the baseball field adjustment. The parking along Field Avenue is reported to be 100% occupied during the evening baseball games or practices. Walker also conservatively assumed the on-street parking on the unit blocks of 2nd, 3rd, and 4th Streets was also 100% occupied during the 6:00 pm hour. The table below shows the observed and adjusted parking demand at these locations on Thursday and Saturday at 6:00 pm. Walker anticipates an additional 44 vehicles in the neighborhood if these six block faces are 100% occupied on a weekday and about 57 additional cars on a Saturday.

Table 13: Baseball Field Seasonal Parking Impact

Street	Supply	Weekday		Saturday	
		Observed Demand	Projected Demand Increase	Observed Demand	Projected Demand Increase
Field Avenue	63	45	18	29	34
4th Street	17	13	4	17	0
3rd Street N	12	3	9	5	7
3rd Street S	13	10	3	7	6
2nd Street N	7	1	6	4	3
2nd Street S	7	3	4	0	7
Total	119	75	44	62	57

Source: Walker Consultants, 2024

The seasonal adjustments associated with the outdoor restaurant space and baseball field only impact the public off-street and on-street parking categories in Zones B and D. In Zone B, the overall occupancy rate is expected to increase by five percentage points on a weekday and six percentage points on a Saturday. Similar increases are anticipated in Zone D (five points on a weekday and seven points on a Saturday).

Table 14: Lower Aspinwall Seasonally Adjusted 6:00 pm Parking Occupancy Summary by Zone

Zone	Type	Supply	Weekday		Saturday	
			Observed	Projected	Observed	Projected
B	Commercial Off-Street	205	31%	31%	10%	10%
	Residential Off-Street	30	33%	33%	40%	40%
	Public Off-Street	159	48%	60%	32%	47%
	On-Street	129	62%	67%	42%	48%
	Zone Total	523	44%	49%	26%	32%
D	Commercial Off-Street	54	15%	15%	20%	20%
	Residential Off-Street	65	45%	45%	42%	42%
	Public Off-Street	63	71%	100%	46%	100%
	On-Street	666	55%	59%	59%	62%
	Zone Total	848	53%	58%	54%	61%
Total	Commercial Off-Street	349	26%	26%	20%	20%
	Residential Off-Street	134	49%	49%	48%	48%
	Public Off-Street	274	48%	62%	30%	50%
	On-Street	1,197	52%	55%	52%	55%
	Zone Total	1,954	47%	50%	43%	47%

Source: Walker Consultants, 2024

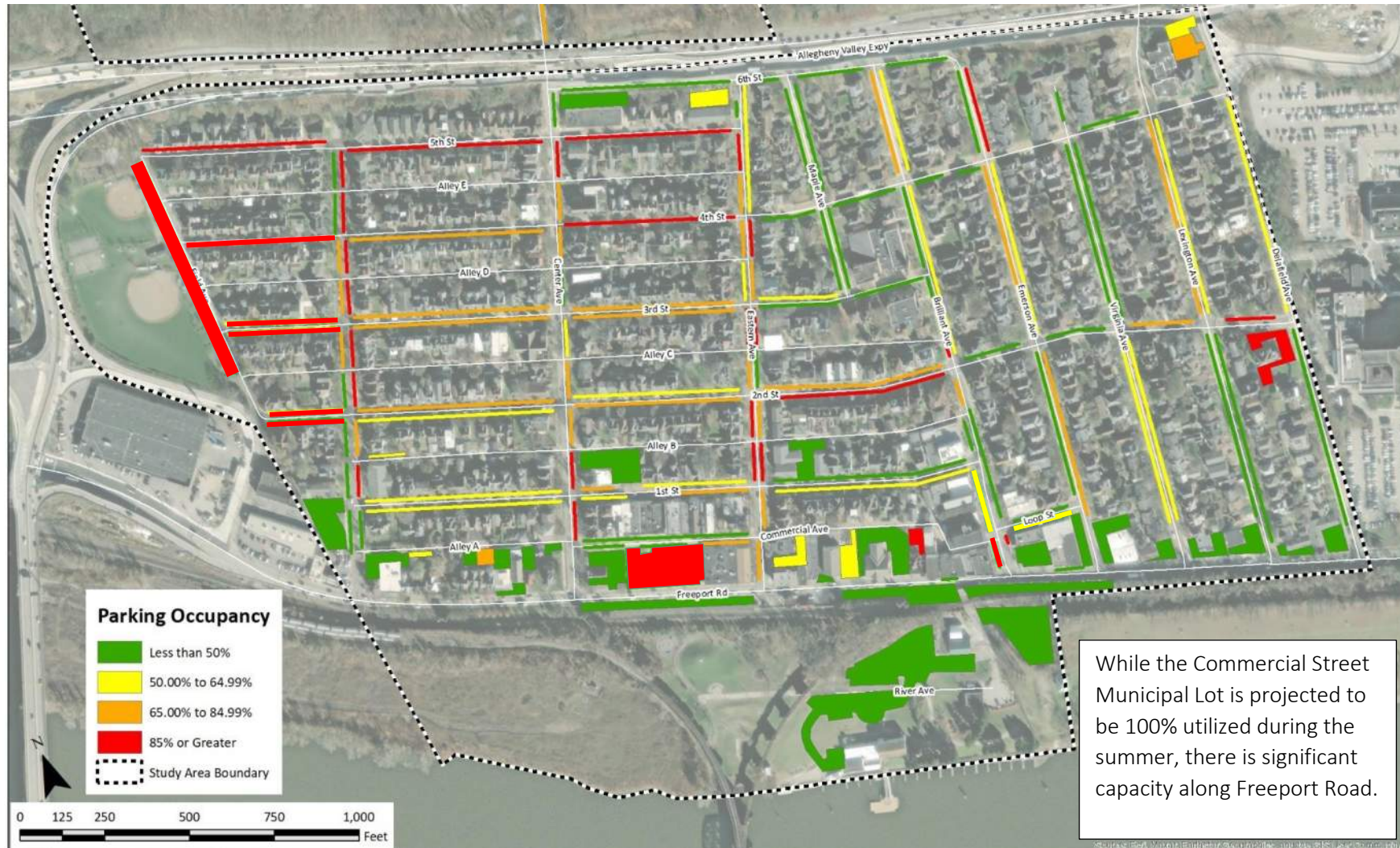
While the overall impact on parking occupancy rates in Lower Aspinwall is not expected to be significant, the seasonal impact on some streets and lots can be seen on the maps below. The streets around the baseball field and the Commercial Street Lot are at 100% capacity.

Figure 28: Lower Aspinwall Seasonally Adjusted Weekday Parking Occupancy (6:00 pm)



Source: Walker Consultants, 2024

Figure 29: Lower Aspinwall Seasonally Adjusted Saturday Parking Occupancy (6:00 pm)



Source: Walker Consultants, 2024

Future Conditions

Review of Existing Reports

Comprehensive Plan

With intensive public outreach and input from the Council and the Planning Commission, the Aspinwall Implementable Comprehensive Plan was developed and adopted in June 2023. The plan focuses on three main issues: Parks Improvements, Transportation and the Public Realm, and Retooling Policies and Programs before identifying smaller strategies or steps needed to achieve the larger vision.

At the time of this report, the Borough had completed one of the strategies identified in the report by installing EV charging stations in the municipal lot on Commercial Street and was making progress on several others. The strategies in progress include:

- Implementing the Recreational Area Master Plan (Phase 1), which features four pickleball courts; a multi-use court for basketball, deck hockey, and futsal; and an accessible path from the parking lot to the court area. They had been awarded a matching grant from the Department of Conservation and Natural Resources (DCNR) and an additional commitment for funding from the pickleball group. With the budget allocated for the next three years, construction is scheduled to begin in 2025.
- Engaging a consultant (Walker) to complete a parking study and recommend improvements to the borough's parking management policies and practices.
- Preparing a zoning ordinance update, which the Planning Commission and an outside consultant are leading. Through a zoning update, the borough hopes to encourage a more walkable business district, activate commercial street frontage, and provide tools that clarify the ordinance, making it easier to understand.

Within the following year, the borough plans to establish and appoint a Sustainability Advisory Committee, activate Alley A as a flexible outdoor gathering space and pedestrian network, and improve Fireman's Park. In the long term, the borough has prioritized the Green Boulevard vision, including a Brilliant Avenue, River Trail Park connection/realignment and improvements to pedestrian safety along Freeport Road, the Brick Streets Policy, and general streetscaping.

As noted in the Comprehensive Plan, much of Aspinwall is already built out, and substantive changes in land use over the long-term planning horizon aren't expected. However, the Recreational Area Master Plan is expected to impact parking needs.

Freeport Road Safety Study

The Freeport Road Safety Study was produced in 2019 and focused on improvements on the section of Freeport Road between Western Avenue and Delafield Avenue. Some of the recommendations presented include:

- replacing and improving sidewalks and ADA ramps to provide a pedestrian-safe path and meet current guidelines,
- installing new crosswalk pavement markings, pedestrian crossing signs, and roadway lighting,
- relocating existing pedestrian pushbuttons,
- investigating the need for additional traffic signals,
- adding additional pedestrian crosswalks with Rectangular Rapid Flashing Beacons to increase the safety and visibility of pedestrians,
- removing metered parking spots that block pedestrian ADA access to ramps and crosswalks, and
- implementing traffic calming measures to reduce vehicle speed and improve pedestrian safety.

Walker understands the borough is in the process of pursuing these measures based on the recommended prioritization matrix. Many of these recommendations do not impact future parking demand but could impact the future parking supply within the borough. For example, during the stakeholder interviews, many residents indicated that parking across Freeport Road was not preferred, in part due to safety. Increasing pedestrian safety and improving access to the parking along Freeport Road and in the Merchant Lot by upgrading lighting, increasing the number of crosswalks, installing Rectangular Rapid Flashing Beacons, implementing traffic calming measures, and replacing sidewalks improve the overall efficiency of the existing parking system. Between Freeport Road and the Merchant Lot, over 150 underutilized parking spaces exist.

Future Development

Recreational Area Phase 1 and Fireman's Park

The Aspinwall Implementable Comprehensive Plan, adopted in June 2023, features a conceptual reimagining of the Recreational Area between Field Avenue and Route 28 onramp. The park includes two baseball fields, a batting cage, two multi-purpose courts (basketball, tennis, and hockey), a playground with a splash pad, and a large pavilion. There is also a concession stand between the two fields. Walker confirmed 61 parking spaces along Field Avenue to support the recreational area.

In the reimagined concept plan, shown in the following image, one baseball field is replaced with an open lawn and a smaller pavilion with six picnic tables. The second field is reoriented 180 degrees to the northeast, allowing for additional green space with a walking path and pavilion on the park's southern end. The existing batting cage and multi-purpose courts are replaced and upgraded to include four lighted pickleball courts and one multi-purpose court for basketball, futsal, and dek hock. Current plans do not show any changes to the parking spaces along Field Avenue.

The borough is moving forward with Phase 1, which focuses on replacing and upgrading the multipurpose courts. No changes to the baseball fields are anticipated in Phase 1.

Figure 30: Aspinwall Recreational Area Master Plan Concept



Source: Aspinwall Implementable Comprehensive Plan, 2023

after the first phase of the Recreational Area improvements are completed. During our site visit, very few cars were parked in the Fireman's Park lot. The borough has indicated that most users arrive by alternative means such as walking or biking.

Alley A Activation

In the Comprehensive Plan's Transportation and the Public Realm section, activating Alley A was identified as one of the key strategies to support the community's vision. Alley A generally extends from Western Avenue to Brilliant Avenue, although the roadway becomes Commercial Avenue for a block. The 700-foot section discussed explicitly in the Comprehensive Plan stretches between Eastern Avenue and Brilliant Avenue, as shown in the following figure. Residential vehicles are permitted to park on some portions. Still, it is primarily used by residents, business owners, employees, and customers to access any parking pads or by service vehicles for trash and other

Aspinwall was recently awarded a Department of Conservation and Natural Resources (DCNR) matching grant to complete Phase 1 of the project. The borough has allocated funds in the budget for the next three years and received a commitment from a local pickleball group to cover the remainder. Construction is expected to begin in 2025.

The Comprehensive Plan also recommended improvements to Fireman's Park in Upper Aspinwall. The most significant changes include formalizing /striping the parking lot to include two ADA spaces, two EV charging spaces, and 15 regular spaces. The lot is unstriped, but Walker estimated about 20 spaces during our parking survey.

Other improvements/changes to the park include neighborhood sidewalk connections, an enhanced park entrance, an Allegheny River overlook station, a second bocce court, and possibly converting the existing volleyball court to a small multi-purpose court. The improvements to Fireman's Park are expected to occur

utilities/maintenance tasks. Through discussion with borough staff and the chamber of commerce, Walker understands the alley is occasionally closed to vehicular traffic during community events.

Figure 31: Activate Alley A Concept Plan



Source: Aspinwall Implementable Comprehensive Plan, 2023

The borough intends to explore and implement some recommendations outlined in the Comprehensive Plan starting in 2025. This important piece of the pedestrian network connects the borough’s two commercial business districts. With additional investments, activation of the space could be more regular. These include public art installments, string or in-ground path lighting, and portable “placemaking” elements like seating, planters, heaters, etc. Although Alley A cannot be closed full-time to vehicular traffic, locking, removable bollards are another feature that could solidify its pedestrian accessibility.

From a parking standpoint, how and when the alley is activated could generate additional parking demand or, more likely, reduce the available parking supply, at least for a short time. Several residents and visitors have rear access parking, typically less than four spaces per parcel. A Google Earth image suggests about 20 residential and commercial parking spaces accessible only from Alley A. The parking lot supporting the Aspinwall Professional Business at 12 Eastern Avenue, with its seven spaces, will also likely be impacted by restricting access to Alley A due to one-way traffic flow in the lot. The borough may want to consider a special permit and designated parking location for residents impacted by the temporarily restricted access to their rear parking. One option could be negotiating a shared parking agreement with the Farmer’s National Bank to use their lot during non-business hours.

Pop-up or more significant special events could drive additional parking demand to the area while limiting access to existing parking facilities, putting double the stress on the remaining parking system. However, with regular closure of the alley or a portion of the alley, more businesses may create temporary or permanent frontage along the alley. Some additional parking demand may be realized because visitors seek the “experience” of a pedestrianized street, but additional foot traffic may not translate to additional parking demand. More regular activation of the alley may also result in the capture of existing customers who would otherwise use the primary

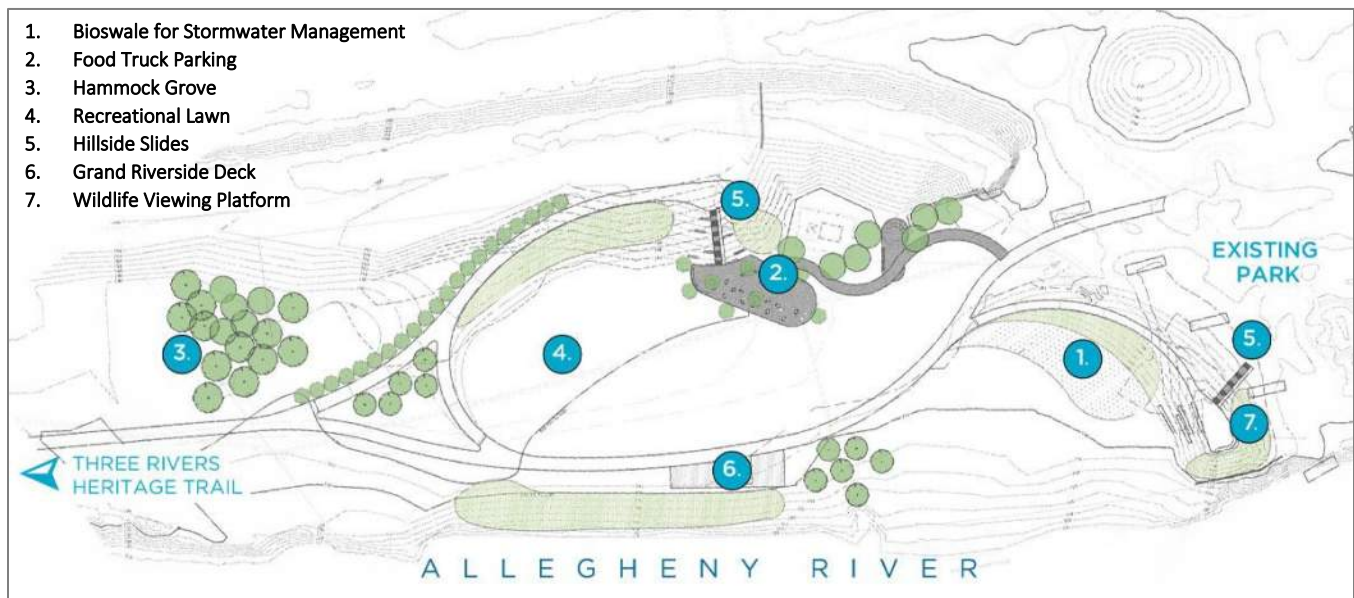
frontage entrance. Further study with economic partners is needed to understand the potential for increased activity.

Allegheny RiverTrail Park

The Allegheny RiverTrail Park (ARP) entrance is located on Freeport Road between Eastern Avenue and Brilliant Avenue. The park's entrance is marked by signage on a trestle bridge; visitors drive past the Merchant Lot and the Aspinwall Public Works service area before accessing an approximately 90-space parking lot. The upper part of the lot is gravel, and the lower section is paved. The popularity of the park grows every year. In 2024, the venue hosted 27 weddings, with an average attendance of about 260 people. The park also hosts five weeks of summer camps in the summer and hosted four major concerts, each attracting between 1,000 and 2,000 people.

The park recently extended its trail system to connect with Sharpsburg to the west, increasing utilization and making Aspinwall a major hub on the regional trail system. Within five to seven years, the park will connect Aspinwall to downtown Pittsburgh via the Rails to Trails program, potentially increasing parking demand during the week (commuters) and on the weekend (recreational). The borough is also exploring the possibility of realigning the park's entrance with Brilliant Avenue as part of its Green Boulevard Vision and making pedestrian and bicyclist safety improvements to Freeport Road. Progress on these improvements is dependent on the award of grants.

Figure 32: Allegheny RiverTrail Park Map



Source: Allegheny RiverTrail Park

Walker understands the ARP parks its demand during special events like weddings by implementing temporary valet services or arranging for off-site parking with shuttle service; however, more significant concert events may overflow into downtown Aspinwall, as was the case during the September 13th, 2024 Houserockers concert in the park. A concert with a 1,000-person attendance would be expected to generate around demand for about 350

The Borough may want to consider implementing a special event parking management plan to address overflow parking during special events.

The borough reports approximately 16,900 SF of vacant commercial space in five buildings. The map and table below show the location of each vacancy and the proposed quantity and land use type. All five vacant commercial spaces are in Zone B.

Table 15: Vacant Commercial Space

Source: Borough of Aspinwall, 2024

Properties 1, 2, 3, and 5 have their own private off-street parking supply. In the case of Property 3, they use the spaces in the Commercial Street lot. There is no off-street private parking at Property 4. Any projected demand generated by filling the vacancy was allocated to public off-street parking.

Future Parking Supply

The Borough of Aspinwall is a mature, primarily residential community. As a result, very few vacant or underutilized parcels are available for redevelopment. At the time of this analysis, the borough was unaware of any significant commercial development projects that could impact the existing parking supply. Additionally, the concept designs for the recreational areas identified in the Comprehensive Plan do not include substantive changes to the available parking supply at these locations.

Operationally, Alley A cannot be permanently closed to vehicular traffic. However, Walker estimates that up to 30 spaces could be temporarily removed from the available parking supply when the alley is closed. About one-third of these spaces are commercial, and the remaining two-thirds are residential. Walker did not adjust the future parking supply because these spaces are only temporarily removed.

Operational Capacity

The inventory of parking within the Study Area is adjusted to allow for a cushion necessary for vehicles moving in and out of spaces and to reduce the time needed to find the last few remaining spaces when the parking supply is nearly full. We derive the operational capacity by deducting this cushion from the total parking capacity. The cushion allows for vacancies created by restricting parking spaces to specific users (reserved spaces), mis-parked vehicles, minor construction, and debris removal. A parking supply operates at peak efficiency when parking occupancy, including both transient and monthly parking patrons, is 85 percent to 95 percent of the supply. When occupancy exceeds this level, patrons may experience delays and frustration while searching for a space. Therefore, the parking supply may be perceived as inadequate even though some spaces are available in the parking system.

As a result, operational capacity is used to analyze the adequacy of the parking system rather than the total supply or inventory of spaces. The following are some factors that affect the efficiency of the parking system:

- Capacity – Large, scattered surface lots operate less efficiently than a more compact facility, such as a parking structure, which offers consolidated parking in which traffic generally passes more available parking spaces in a more compact area. Moreover, finding available spaces in a widespread parking area is more complex than in a centralized parking facility.
- Type of users – Monthly or regular parking patrons can find the available spaces more efficiently than infrequent visitors because they are familiar with the parking facility's layout and typically know where the spaces will be available when they park.
- On-street vs. off-street—On-street parking spaces are less efficient because patrons have to find the last few vacant spaces. In addition, patrons are typically limited to one side of the street at a time and often must parallel park in traffic to use the space. Frequently, on-street spaces are not striped or signed confusingly, leading to lost spaces and frustrated parking patrons.

The cushion size depends on the type of user and facility. A factor of 85 percent adjusts on-street parking because of the difficulty of finding an open space while negotiating traffic. A factor of 90 percent adjusts public and commercial off-street parking to account for user unfamiliarity and the challenges of safely navigating the area while searching for a space. Residential off-street parking and the Merchant Lot are adjusted by 95 percent because residents and employees are familiar with the area and generally park in the same location daily. There are almost 2,400 parking spaces in Aspinwall. After adjusting for factors that impact efficiency, the study area's operational capacity is reduced to approximately 2,100 spaces, as shown in the following figure. There are about 285 spaces in the cushion.

Table 16: Operational Parking Supply by Planning Horizon

Zone	Commercial Off-Street	Residential Off-Street	Public Off-Street	On-Street	Total
Zone A	0	219	20	160	399
Zone B	185	29	143	110	467
Zone C	0	37	0	342	379
Zone D	49	62	57	566	734
Zone E	81	0	49	0	130
Total	315	347	269	1,178	2,109

Source: Walker Consultants, 2024

Future Parking Demand

Methodology

Like the seasonal adjustment analysis, Walker used the parking demand ratios recommended by the Urban Land Institute's *Shared Parking*, adjusted for time of day, time of year, and a modal factor to model future parking demand. Shared parking methodology has been a widely accepted industry standard for rightsizing parking facilities for over 40 years. It has been adopted by municipalities and developers across the United States and is included in zoning ordinances as an acceptable practice. Shared parking is endorsed by organizations such as the Urban Land Institute (ULI), the International Council of Shopping Centers (ICSC), the American Planning Association (APA), and the National Parking Association (NPA) as a valid method for parking planning and management.

This approach allows for sharing parking spaces among different uses in mixed-use environments rather than requiring a minimum number of parking spaces for each land use. Implementing shared parking often results in a significant reduction in the total number of required parking spaces. The extent of this reduction depends on the variety and quantity of uses and local code requirements.

The shared parking methodology begins by assessing a development's land use quantities, such as the number of residential dwelling units, and multiplying these figures by a base demand ratio. These base parking demand ratios, found in the ULI Shared Parking model and sometimes refined through additional research by Walker, serve as a starting point for the analysis. Based on studies of parking generation rates for standalone developments, these industry standards are later adjusted to reflect specific site conditions.

The table below summarizes the base parking ratios used to project future parking demand in Aspinwall.

Table 17: Base Parking Demand Ratios

Land Use	Weekday Base Ratio		Weekend Base Ratio	
Multi-Family Residential	1.31	/Unit	1.36	/Unit
Medical Office Building	4.50	/1,000 SF GLA	4.50	/1,000 SF GLA
Office	3.55	/1,000 SF GFA	0.35	/1,000 SF GFA
Fitness		/1,000 SF GLA		/1,000 SF GLA
Pickleball Courts	3.44	/Court	3.78	/Court

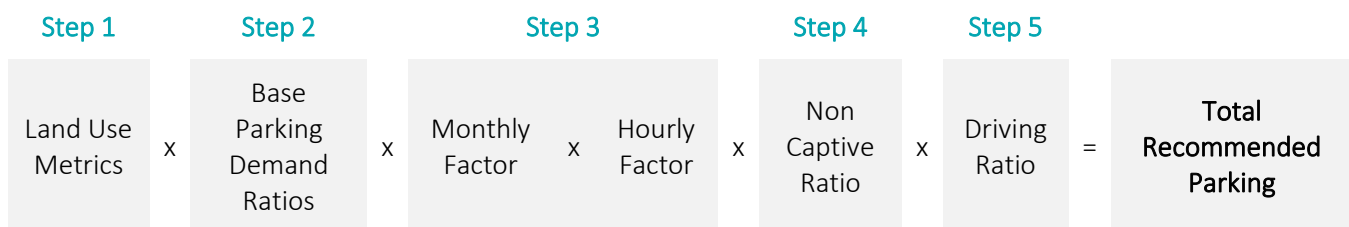
Note: The base ratio includes customer/visitor and the employee/resident components.

Source: Walker Consultants, 2024

The base ratios are adjusted to account for seasonality and hourly fluctuations. It is expressed as a percentage of potential demand modified for the time of day and time of year. The parking demand for each land use may peak at different times, which generally means that fewer parking spaces are needed for the combination of land uses in a project than would be required if each land use were considered separately. In the case of Aspinwall, Walker adjusted the ratios to reflect 6:00 pm conditions during the summer to align with the seasonal adjustment.

Walker also applied two additional adjustments to the base parking demand ratios: one to reflect an estimate of the local transportation modal split (called the drive ratio) and another to account for the best estimate of captive market effects (called the non-captive ratio). The following graphic provides an illustrative view of the steps involved in the shared parking methodology.

Figure 34: Steps of Shared Parking Analysis



Source: Walker Consultants, 2024

Allowing multiple land uses and entities to share parking spaces has allowed for and led to the creation of many popular real estate developments and areas, resulting in the combination of office, residential, retail, hotel, and entertainment districts that rely heavily on shared parking for economic viability while providing parking accommodations to meet the actual demand generated by the development. Traditional downtowns in large and small cities alike have depended on the practice to be compact, walkable, and economically viable.

No changes were made to the Upper Aspinwall parking conditions, as no new developments or vacancies were identified. The existing Fireman's Park parking lot is expected to support any future changes in demand associated with the master plan concept.

Weekday Lower Aspinwall

During the October survey, weekday occupancy in Lower Aspinwall peaked around noon; however, when the seasonal impact of the outdoor space is considered, the peak is expected in the evening. While filling the existing vacant commercial space generates additional parking demand during the day, the peak is expected to remain around 6:00 pm during the summer. The following table shows the parking impact of the new pickleball courts and vacant commercial space on the overall parking system.

The vacant commercial space in Zone B is expected to impact both commercial and public off-street parking occupancy rates. The outdoor restaurant space will also likely impact public parking in Zone B.

Table 18: Lower Aspinwall Future Weekday 6:00 pm Parking Occupancy Summary by Zone

Zone	Type	Supply	Existing	Projected
B	Commercial Off-Street	205	31%	36%
	Residential Off-Street	30	33%	33%
	Public Off-Street	159	48%	74%
	On-Street	129	62%	67%
	Zone Total	523	44%	55%
C	Commercial Off-Street	54	0%	0%
	Residential Off-Street	65	67%	67%
	Public Off-Street	63	0%	0%
	On-Street	666	43%	43%
	Zone Total	848	45%	45%
D	Commercial Off-Street	205	15%	15%
	Residential Off-Street	30	45%	45%
	Public Off-Street	159	71%	119%
	On-Street	129	55%	59%
	Zone Total	523	53%	60%
E	Commercial Off-Street	54	23%	23%
	Residential Off-Street	65	0%	0%
	Public Off-Street	63	19%	19%
	On-Street	666	0%	0%
	Zone Total	848	22%	22%
Total	Commercial Off-Street	349	26%	29%
	Residential Off-Street	134	49%	49%
	Public Off-Street	274	48%	74%
	On-Street	1,197	52%	55%
	Lower Aspinwall Total	1,954	47%	52%

Source: Walker Consultants, 2024

Most notably, the addition of the pickleball courts in Zone D, combined with baseball games at both fields, is projected to increase demand from 71% today to 119%. The Future Adequacy section discusses the magnitude of the projected deficit in Zone D.

Weekend Lower Aspinwall

Peak weekend parking demand is also expected to occur around 6:00 pm based on the mix of existing and proposed land uses in Aspinwall. Changes to parking occupancy are projected in Zones B and D. The existing parking supply is expected to adequately meet future parking needs in most zones. However, the combined pickleball courts and baseball games result in a 117% public off-street occupancy rate in Zone D.

Table 19: Lower Aspinwall Future Weekend 6:00 pm Parking Occupancy Summary by Zone

Zone	Type	Supply	Existing	Projected
B	Commercial Off-Street	205	10%	10%
	Residential Off-Street	30	40%	40%
	Public Off-Street	159	32%	50%
	On-Street	129	42%	48%
	Zone Total	523	26%	33%
C	Commercial Off-Street	54	0%	0%
	Residential Off-Street	65	64%	64%
	Public Off-Street	63	0%	0%
	On-Street	666	44%	44%
	Zone Total	848	46%	46%
D	Commercial Off-Street	205	20%	20%
	Residential Off-Street	30	42%	42%
	Public Off-Street	159	46%	117%
	On-Street	129	59%	62%
	Zone Total	523	54%	62%
E	Commercial Off-Street	54	42%	42%
	Residential Off-Street	65	0%	0%
	Public Off-Street	63	2%	2%
	On-Street	666	0%	0%
	Zone Total	848	27%	27%
Total	Commercial Off-Street	349	20%	20%
	Residential Off-Street	134	48%	48%
	Public Off-Street	274	30%	57%
	On-Street	1,197	52%	55%
	Lower Aspinwall Total	1,954	43%	48%

Source: Walker Consultants, 2024

Future Parking Adequacy

Weekday Lower Aspinwall

Parking adequacy is a way of expressing the number of parking spaces remaining when parking demand is subtracted from the operational capacity. Because a parking lot is perceived as full before it reaches 100% utilization, operational capacity, rather than total parking supply, is used when assessing the adequacy of a parking system. A negative adequacy indicates a deficit; a positive result reflects a surplus. As discussed previously, different adjustment factors are applied to different types of parking facilities. For example, the operational capacity of on-street parking is typically 15% less than the total on-street supply because it is more challenging to find while navigating traffic. Depending on the typical user type, off-street parking is adjusted by 5% to 10%.

During the 6:00 pm peak, most types of parking in most zones in Lower Aspinwall are expected to have a surplus of parking except for the public off-street parking in Zone D. An 18-space deficit is expected in Zone D, associated with the baseball fields and pickleball courts. It is important to note that Walker assumed some of the on-street spaces around the recreational area, in addition to the Field Avenue Public Lot, would be occupied by visitors during the Saturday night peak. Approximately 23 additional vehicles were projected to park on-street in Zone D. If the borough were to develop additional parking to meet the future deficit, Walker recommends also accounting for the increased on-street demand.

Table 20: Lower Aspinwall Future Weekday 6:00 pm Parking Adequacy Summary by Zone

Zone	Type	Operational Capacity	Demand	Surplus/Deficit
B	Commercial Off-Street	185	73	112
	Residential Off-Street	29	10	19
	Public Off-Street ¹	146	118	28
	On-Street	110	87	23
	Zone Total	470	288	182
C	Commercial Off-Street	0	0	0
	Residential Off-Street	37	26	11
	Public Off-Street	0	0	0
	On-Street	342	172	170
	Zone Total	379	198	181
D	Commercial Off-Street	49	8	41
	Residential Off-Street	62	29	33
	Public Off-Street	57	75	(18)
	On-Street	566	395	171
	Zone Total	734	507	227
E	Commercial Off-Street	81	21	60
	Residential Off-Street	0	0	0
	Public Off-Street ²	47	10	37
	On-Street	0	0	0
	Zone Total	128	31	97
Total	Commercial Off-Street	315	102	213
	Residential Off-Street	128	65	63
	Public Off-Street	250	203	47
	On-Street	1,018	654	364
	Lower Aspinwall Total	1,711	1,024	687

1. Zone B's surplus public off-street spaces will likely be located along Freeport Road, which is considered less convenient than the Commercial Street Lot.
2. The Merchant Lot also has a surplus of parking during the 6:00 pm peak but is considered less convenient than Commercial Street.

Source: Walker Consultants, 2024

Weekend Lower Aspinwall

During the weekend peak, the overall study area in Lower Aspinwall is expected to have approximately 767 surplus parking spaces. Again, most parking types in most zones are projected to have sufficient capacity to meet the projected need, except for the Field Avenue Lot in Zone D. A 17-space deficit is anticipated. Additionally, while

the overall study area is expected to have sufficient parking capacity, there are localized “hot spots,” i.e., streets where demand exceeds the available operational capacity. During our 6:00 pm survey, about six streets experienced a small one- to two-space deficit. In all cases, there is a surplus on an adjacent street.

Table 21: Lower Aspinwall Future Weekend 6:00 pm Parking Adequacy Summary by Zone

Zone	Type	Operational Capacity	Demand	Surplus/Deficit
B	Commercial Off-Street	185	21	164
	Residential Off-Street	29	12	17
	Public Off-Street ¹	146	80	66
	On-Street	110	62	48
	Zone Total	470	175	295
C	Commercial Off-Street	0	0	0
	Residential Off-Street	37	25	12
	Public Off-Street	0	0	0
	On-Street	342	178	164
	Zone Total	379	203	176
D	Commercial Off-Street	49	11	38
	Residential Off-Street	62	27	35
	Public Off-Street	57	74	(17)
	On-Street	566	415	151
	Zone Total	734	527	207
E	Commercial Off-Street	81	38	43
	Residential Off-Street	0	0	0
	Public Off-Street ²	47	1	46
	On-Street	0	0	0
	Zone Total	128	39	89
Total	Commercial Off-Street	315	70	245
	Residential Off-Street	128	64	64
	Public Off-Street	250	155	95
	On-Street	1,018	655	363
	Lower Aspinwall Total	1,711	944	767

1. Zone B's surplus public off-street spaces will likely be located along Freeport Road, which is considered less convenient than the Commercial Street Lot.
2. The Merchant Lot also has a surplus of parking during the 6:00 pm peak but is considered less convenient than Commercial Street.

Source: Walker Consultants, 2024



02

Recommendations

Recommendations

Goals

The goals of any parking system are centered on providing the most efficient and friendly parking experience to residents, patrons, and visitors. This outcome is accomplished through various parking policies promoting a positive customer experience while ensuring supply is available for commercial, residential, and civic activity. Management of the parking supply plays a key role in ensuring that residents, visitors, and patrons find parking quickly and efficiently while assisting in mitigating unwanted on-street parking by long-term users, including employees. Walker's recommendations for Aspinwall incorporate the following strategies that promote effective management of the entire parking system:

- Prudent use of available parking technologies;
- Consistent but fair enforcement;
- Promotion of a range of parking and mobility choices;
- Clear and understandable options, policies, signage, and wayfinding;
- Balancing the needs of residents, employees, visitors, business owners; and
- Establishing a sustainable financial structure.

The community can address the parking challenges by creating more supply, better managing the existing resources, or a measured combination of both. The recommendations in this report discuss the merits of each. The majority of the recommendations address the challenges of parking management before having to commit to long-term capital investments.

Parking Operations and Management Considerations

Basic Parking System Operations Tasks

Various functional tasks are necessary in operating an on- and off-street parking operation. These include taking payment, controlling access to certain facilities, managing contracts and permits for use on- and off-street, encouraging compliance and conducting enforcement, maintaining and caring for physical assets, and collecting regular data to inform operational decisions and policies (data-driven performance management). These essential elements must be considered when designing policies and operational strategies and procuring and utilizing technology.

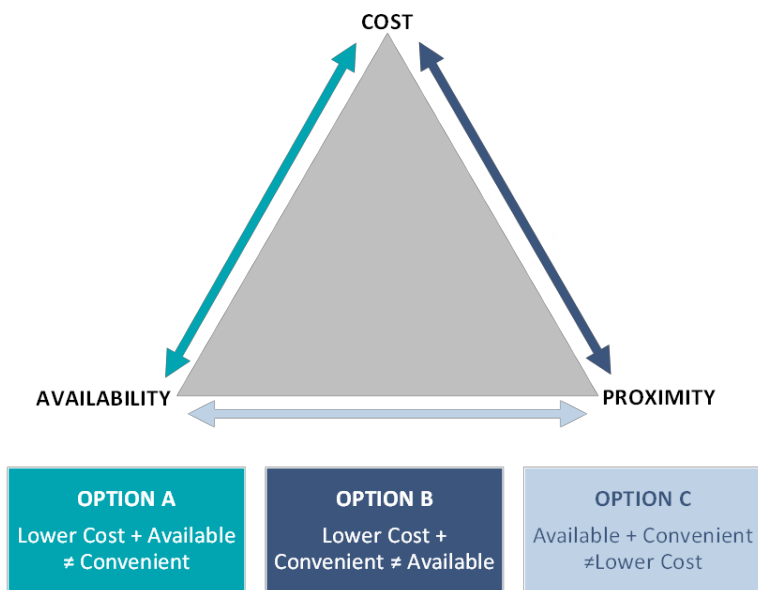
Calibrating Parking System Finances

From a financial perspective, a parking system is ideally self-supporting through parking user fees. The concept is that those who do not use parking infrastructure should not be taxed through the general fund or other measures

to pay for this service. By applying natural market forces that recognize the demand for parking, particularly curbside parking, a revenue stream can be generated to fund planning, construction, operations/management, and maintenance. While the borough operates under this philosophy in the commercial districts, this can be extended to residential streets.

Parking Supply Management

The success of any parking program depends on the effective enforcement of regulations for its respective on-street and off-street parking systems. In setting parking rates, fees, and associated time limits, the logic is to control parking demand by pricing the most convenient and desirable parking locations higher than less convenient parking locations. This practice is best represented by the “parking triangle” of cost, availability, and proximity (convenience).



In a thriving environment, it is possible for customers to have two of these three criteria met, but it is not possible to have all three met at the same time.

Following the laws of market economics, conveniently located facilities with available spaces typically come at a premium price. Parking facilities that are low-cost or free and consistently have available spaces are likely not conveniently located. The facilities providing the highest overall service should be priced the highest. Users are willing to pay for a high degree of service (i.e., conveniently located parking and assurance that parking will be available) when they are confident the service will be delivered accordingly. Less convenient and longer-term parking should be priced lower to promote longer-term parking in these areas. Even with off-street parking, the locations closest to key destinations should be priced higher than facilities on the periphery.

The same approach is taken by airlines, hotels, theaters, stadiums, and similar venues where premium seating is priced higher than less desirable seating locations. Like tickets to a baseball game or concert, where the value of a front-row seat is far greater than one in the last row, a municipality could price its on-street and off-street parking assets similarly. Using this practice with parking encourages users to make a choice that best meets their needs, distributes demand accordingly (not to have all users demanding the same parking spaces) and thereby reduces circling in search of parking and customer frustration, encourages the turnover of the most convenient spaces, and promotes better overall availability of parking throughout the system. For on-street parking, hourly rates

should be set so that one or two spaces on each block are available at any time. The hourly rate is likely too low if parking is consistently 100% occupied (under typical non-event conditions).

Parking Management Recommendations

This section provides detailed parking operations and management recommendations and considerations. Municipalities and parking operators can employ various policy, program, and infrastructure strategies. Care was taken to present customized strategies that are most relevant to the Borough of Aspinwall.

Recommendations provided herein are meant to address the specific needs, issues, and opportunities identified through the evaluation phases of this project. Recommendations are provided below according to the following categories:

- Internal Parking Operations
- Communication, Marketing and Wayfinding
- Curb Management
- Parking Management
- Zoning Requirements
- Technology
- Infrastructure Improvements

Internal Parking Operations

Develop a Mission Statement

If the borough has not already done so, Walker recommends the creation of a Mission Statement to help guide the discussion and actions of the organization around parking. The goals of the parking system are best formalized by borough leadership and best communicated to the public through a mission statement. The following is offered as an example:

“To provide safe, well-maintained on- and off-street parking facilities, to manage those facilities efficiently, effectively, and equitably so as to benefit a wide variety of parking needs, to operate in a welcoming but business-like manner, to maximize parking performance, keep operating costs low, and be fiscally and operationally responsive to the changing parking needs of Keene’s residents, visitors, employees, business owners, and property owners.”

Review and Update Written Job Descriptions, Policies, and Standard Operating Procedures

There is no parking department, enterprise, or authority in Aspinwall; as a small municipality, parking-related tasks are split between the police, public works, and borough administrative staff. While the workload is informally allocated, clear job descriptions for every borough parking employee are recommended to ensure that each role has a defined set of responsibilities, that employees in those roles are aware of their duties, that

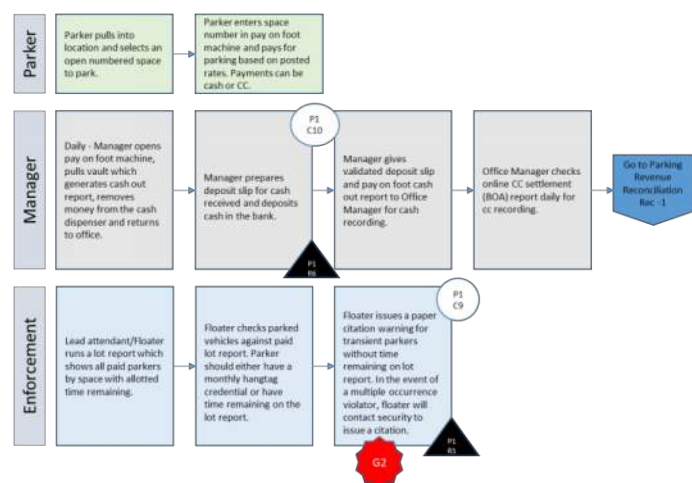
responsibility for all necessary parking-related functions is being addressed, and to be used as a measuring tool when evaluating employee performance. Job descriptions should be updated regularly as each position's function(s) evolve within the department. Job descriptions should also detail educational and experience requirements and expectations for ongoing training. This is especially important as the scope and scale of parking services the borough offers expands.

Clear day-to-day roles and responsibilities for each position are necessary to ensure that all functions are being addressed and that there is no unnecessary duplication or overlap of duties. Written descriptions of roles and responsibilities are also helpful when evaluating which position(s) may be best suited to take on new or additional tasks or responsibilities. Position roles and responsibilities should be updated regularly as the functions performed by each position evolve.

In addition to employee job descriptions, written operating policies and procedures are essential. An example of such a flowchart is included in Figure 35. If they don't already exist, these should be developed primarily as internal documentation of internal expectations. These serve as additional detail as to the "how" and "why" specific tasks and responsibilities are carried out and are an extension of documented employee roles and responsibilities. The borough should develop policies and standard operating procedures related to the following:

- Contract parking permitting and enforcement;
- Transient parking payment collection and enforcement;
- Residential permit parking permitting and enforcement;
- Accommodating parking validations;
- Employee professionalism and customer service.
- Accounting and reconciliation; and
- Performance management.

Figure 35: Internal Parking Management Flowchart



Source: City of Knoxville Public Building Authority, 2023

Create a Parking Enterprise Fund

Currently, the borough's parking operation most closely matches the general fund model. Parking is a division of planning. While no director or division manager exists, support staff (administrative and enforcement) have authority over all parking-related activities. Budgeting is performed as part of the borough's annual budgeting process. As a result, the borough has more flexibility with revenues but competes with other municipal programs for funds.

While still a division within a more extensive department, the enterprise fund model of operation is a self-supporting government fund solely to operate and manage parking. Revenues generated by parking (both residential and commercial) are deposited into the enterprise fund for the sole purpose of operating parking and can be used to reinvest in the system. It accurately accounts for parking finances, promotes budget transparency, and allows the public to see the rationale behind parking rates and rate increases. The borough already summarizes parking revenues collected from fines, permits, and fees in the Mayor's Report. Still, expenses associated with operating parking are folded into the general fund and are more challenging to identify. An enterprise fund would allow the borough to see an accurate parking accounting. Encouraging an enterprise fund would also reduce the financial burden on the general fund by directly linking the service costs to the service users (i.e., parking fees).

Promoting transparency and supporting initiatives is critical as the borough begins implementing changes to its parking system. Showing how the funds collected are directly used in service delivery, especially if new fees are levied, makes it easier to build consensus.

Communication, Marketing, and Wayfinding

Conduct an Inventory of Existing On-Street Signs and Take Appropriate Action

Various signs and sign types are present throughout Aspinwall, including parking-related signage. Too many signs can add visual clutter to an area and confuse visitors. The use of color and messaging across current signs is relatively consistent within the residential neighborhood. Publicly available on-street parking is generally green. The street cleaning signage, no parking, and resident-only signage are red. Examples of the existing on-street signage are shown below.

While most streets have signage at either end of the block, Walker noted that only some alleys have “no parking” or “one-hour limit” signs. And when they were posted in the alleyways, the frequency of the signage was inconsistent.

Walker also noted that the “No Parking Here to Corner” sign on the unit block of Eastern Avenue is faded beyond readability. There were also several locations where the on-street signage was hidden by foliage.

Figure 36: On-Street Signage Examples



Source: Walker Consultants, 2024

The borough should also document and inventory all non-regulatory signage to create an organized, comprehensive approach to signage and wayfinding. It should address outdated and inconsistent signage and remove defunct business signs, extraneous poles, and supports. The goal is to remove sign clutter and visual “noise.” The focus for non-regulatory signage should be in the commercial districts first.

Apply Unified City Brand to all Downtown Parking System Signage

Signage at the Commercial Street Municipal Lot is consistent with the borough’s brand identity and features a black background, white lettering, and a gold frame. It is consistent with the monument and wayfinding signage located along Freeport Road. Examples of the borough’s existing signage in the Commercial Street Lot are shown on the following page. While it is consistent with the borough’s brand identity, Walker does recommend adding lighting and/or reflective elements to the identification signage at the lot’s entrance. It is also difficult to see the borough’s logo on the informational signage detailing the hours of operation.

Figure 37: Branded Signage Examples



Source: Walker Consultants, 2024

The existing signage at the Commercial Street Lot incorporates many successful vehicle parking signage components. As noted above, it is not lit up or reflective and does not distinguish the facility's name. Including this component in the signage is essential when directing visitors to a specific lot.

Components of Successful Vehicle Parking Signage

1. Consistency of signs across system
2. Limited bright, distinct colors
3. Large fonts with limited text
4. Prominent "P" symbol and directional arrows
5. Reflective font or lit-up for nighttime visibility
6. Distinguishes facility name



Signage at the borough's other off-street parking locations, including Freeport Road, the Merchant Lot, and the shared lot on Western Avenue, is inconsistent with the borough's brand identity. Walker understands Improvements are in progress for the Freeport Road parking lots/areas. Any improvements to the parking lots

should include signage upgrades. Signs must be designed and integrated to establish one unified, consistent, and recognizable parking system that provides a sense of place. This can be done by incorporating the borough logo and branding elements into each sign within the sign system. This same branding should be used throughout all signs, print, and digital materials that the Borough of Aspinwall distributes related to its parking system. This creates brand recognition and trust among customers.

While most spaces on Freeport Road are permitted during the daytime and require signage designating a corresponding permit number, the signage should still be consistent with the borough's brand identity. This will also allow the space and signage to transition to public/transient parking on nights and weekends. The existing signage along Freeport Road is shown below. Any newly branded signage should include the space number and the borough's logo.

Figure 38: Freeport Road Space Signage



Source: Walker Consultants, 2024

Update Borough Website to Include Parking Homepage

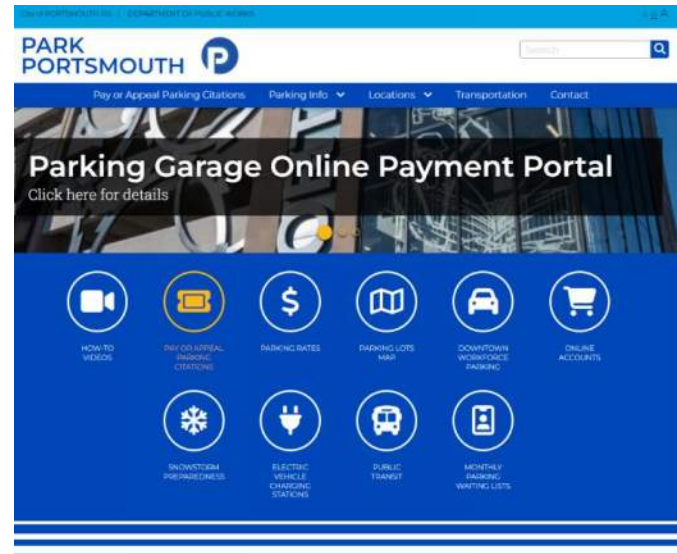
In addition to consulting web and app-based sources for restaurant recommendations and points of interest, people visiting a city for the first time often look to similar resources for parking information. Providing easily accessible and clear parking information can significantly reduce the stress experienced by first-time or infrequent visitors to a city. Quickly navigating from the landing page to relevant information, like registering for a permit or paying a citation, is key for residents.

To the right is a photo of Portsmouth’s parking homepage. They have a simple website design with links to parking maps, online accounts, public transit, parking rates, and snow preparedness.

The borough’s website has limited information about parking activities on its home page. Visitors can “pay parking fines” or “pay for permits.”

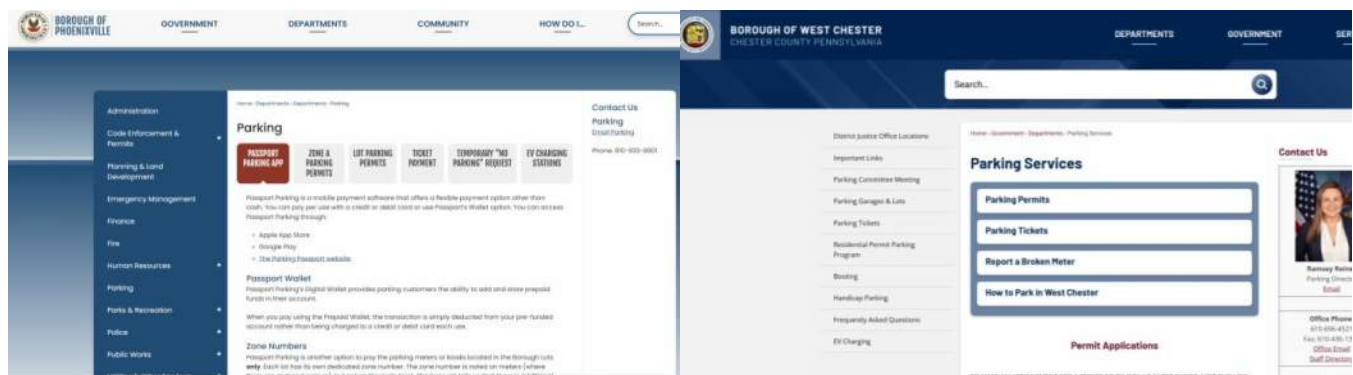
However, it is unclear whether commercial parking permits can be found under “pay for permits.” The city should provide a clear and branded parking map showing where public parking is available and information on rates, rules, and regulations. Information about residential parking permits should be added to the borough’s website. The website should be mobile-compatible, and the borough should consider working with the Chamber of Commerce to share parking information about Aspinwall with visitors.

Figure 39: Example Parking Homepage



Source: City of Portsmouth, 2024

Figure 40: Example Parking Homepages



Smaller municipalities like West Chester and Phoenixville, PA have also created parking homepages with links to online accounts, citation payment, enforcement hours, parking maps, and meter rates. On both city homepages, visitors can easily navigate to the parking services homepage from the “Departments” menu or using the search bar. The most important feature is that all parking-related activities can be found from this homepage.

Estes Park, Colorado, is a community that offers excellent web-based parking resources for residents and visitors alike. Estes Park distributes public parking maps with a link to the parking website. The map illustrates the location of on- and off-street parking and indicates time limits and parking rates.

At a minimum, Walker recommends the borough work with Google and Apple Maps to add the locations and names of the public parking facilities to online mapping services. Information about the lot, including facility name, hours of operation, time limits, and fees (if applicable), could be included in the listing, along with a link to the borough's website. Once the borough has "claimed a business" through Google, the parking facilities become searchable locations for visitors unfamiliar with the parking options available in the community. Walker has included the link to Google My Business for reference:

<https://www.google.com/business/>

Figure 41: Example Parking Map



Source: Estes Park, 2024

Coordinate with the Chamber of Commerce and Outside Entities to Formalize and Promote Parking Options

As noted above, the borough should work with the Chamber of Commerce to advertise on- and off-street parking options and coordinate parking options during special events. The Chamber's website already features a map of the commercial district with the location of each member business identified. The off-street parking options could be added to this map, or a separate webpage and marketing materials could be created to share information about parking options, enforcement hours, meter rates, etc. Printed materials could be shared with chamber members to display in their shops.

The Chamber should coordinate with borough management before special events and create a parking plan. The plan should address things like designated parking areas and/or parking lots being closed, temporary signage, campaign strategies to encourage alternative modes of transportation, and employee parking. Special events sponsored by the Chamber and advertised on the Chamber's website should also include parking and mobility information.

Develop and Launch an Ongoing Parking-Related Communications and Marketing Campaign

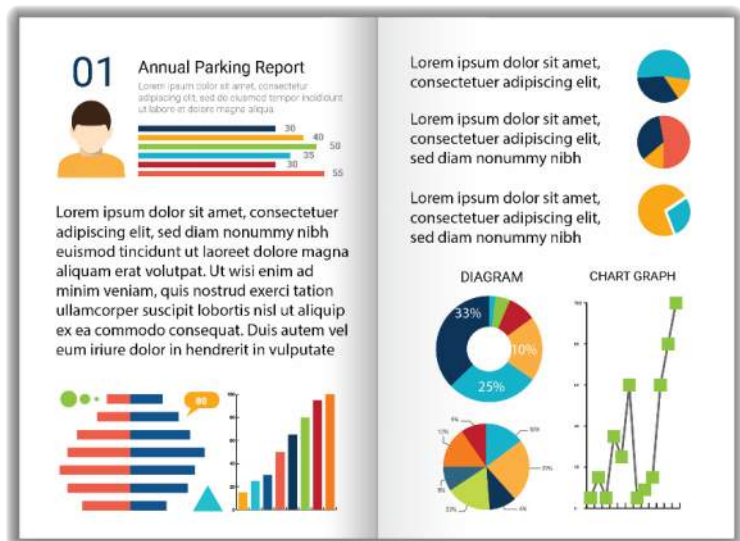
Many of the frustrations and challenges around parking stem from users not knowing where to park or the rules and regulations. Users often cannot discern public parking resources from private or reserved parking resources. Additionally, when parking rules and regulations change, such as revising the residential parking permit program, there is a greater chance for confusion and misparking.

The borough should develop and release an education and promotion campaign around where to park, how to park and pay, and why paid and managed parking is essential. If the proposed residential parking permit program changes are adopted, the borough should also create a promotional campaign. Communications should include flyers, social media, websites, advertisements, and videos. Aspinwall should leverage and expand upon the content it has already created. The borough should work with the Chamber to distribute information to visitors, employees, and residents.

The primary goal should be that residents, employees, and visitors understand the parking system constraints and know where parking is located, how to pay, how much it will cost, where overflow parking is, and about alternate and/or remote parking and travel options.

Publish Annual Parking System Report

Communication and transparency are essential to cultivating a good relationship between any public entity and its constituents. Parking is expensive to build, operate, and maintain. Aspinwall has limited undeveloped space and is committed to maintaining its historic quality, built environment, and natural aesthetic. As a result, parking supply is and will remain limited. Charging for parking is critical to operating and maintaining the public parking system for businesses, employees, residents, and visitors, generating necessary revenue, and deterring parking system abuse by generating space turnover.



The borough publishes an annual Mayor's Report summarizing monthly fines and revenues. Walker recommends expanding on this practice by publishing a yearly parking system report detailing accomplishments throughout the year and reports on performance metrics, including the use of facilities, revenues, and expenses. The report should discuss plans for the upcoming year and work to communicate what parking services does, why it does what it does, how money flows through the system, and how the managed parking system benefits the community, region, and visitors as a whole. As more services are offered, keeping the public informed is vital to compliance.

Curb Management

Revise the Residential Parking Permit Program

Residential parking permit (RPP) programs are typically established to mitigate spillover in residential neighborhoods from commercial or institutional uses or when historic land development has limited the amount of parking available in residential areas. For example, areas around a university, where commuters park on-street in residential neighborhoods rather than pay for a parking pass to park on campus, or in transitional neighborhoods between the downtown core and residential areas when employees or visitors compete with residents for (typically free) on-street space rather than pay. It is essential to understand that RPPs do NOT guarantee a resident a parking space in front of their home, on their street, or within their zone.

RPP programs are typically codified in the zoning ordinance, with specific criteria defined for creating a zone and enforcement hours, restrictions, zone boundaries, and other operating requirements. Chapter 15, Part 409 of the borough's zoning ordinance addresses permit parking. The section states that a resident must show proof of residency to be issued a permit and that the permit is free of charge. Permitholders are exempt from the one-hour time restrictions. It also identifies the block faces that have been designated as resident-only. Walker understands the entirety of both Upper and Lower Aspinwall is part of a residential parking permit district and that there is no limit to the number of permits issued per household. Additionally, visitor passes are provided free of charge and not restricted to specific time limits.

Walker recommends revising the existing residential parking permit program, specifically designating several unique zones within the borough, limiting the number of permits per household and/or charging for permits, and adopting a virtual permit management system. The first step in this process should be establishing a policy for creating a residential parking permit zone or district. This information should then be posted online on its webpage. All information about the RPP program should be shared, including any forms to create a new RPP zone or apply for or renew a permit for an existing zone.

Some questions to consider during this process include:

- Who can designate the RPP zones/districts?
- Why is the district being established?
- Who is eligible for a permit?
- How many permits per dwelling unit/household/address? How should single-family houses divided into apartments be addressed?
- Should the permit be renewed annually?
- How will service and delivery vehicles be handled?
- What is the cost of the permit? Is there an escalating cost based on the number of permits per dwelling unit?
- What are the rules and regulations associated with the permit?
- What signage is needed?
- What is the fine for parking in an RPP zone without a permit?
- When is the RPP enforced? Daytime? Nighttime? Weekday? Weekend?
- Is there a total number of permits in a zone?
- What are the requirements to purchase a permit? Proof of residency? Vehicle registration?
- What kind of vehicles can purchase a permit? What about commercial, recreational, or boats?

- What is the credential? Permit or license plate and where should it be displayed?
- What about visitor parking? Is there just a 2-hour limit, or do visitors need passes? Are passes purchased by residents or free? How many passes should be issued annually per resident/dwelling unit?
- How will the revenue from the program be used? Enforcement and administration? Neighborhood improvements?

Most cities require a petition signed by most residents to initiate establishing a new district. An applicant must submit a letter to the parking manager indicating their interest; then, neighborhood residents work with the parking or city manager to define the zone's boundaries. From there, the city manager, parking department, or other designee studies the proposed district to ensure compliance with city criteria specified in the zoning ordinance.

In Aspinwall, a single district already exists. Walker recommends revising the number of districts or zones in Aspinwall and the enforcement hours. Different sections of the borough, specifically Lower Aspinwall, experience different issues at various times of the day. For example, the homes on streets immediately adjacent to the hospital compete with patients during the day but not in the evening. Conversely, homes in the oldest parts of Aspinwall (between Field and Eastern) experience spillover in the evening from restaurants and baseball games. Our observation of parking activity in Upper Aspinwall indicated no on-street parking deficits or significant conflicts, supporting the termination of the RPP there.

The map on the following page shows the possible boundaries of the proposed new RPP zones in Lower Aspinwall. The zones were delineated based on the borough's zoning map, observed parking activity on both a weekday and Saturday during our site visit, and anecdotal feedback from community stakeholders.

The enforcement hours in the yellow zone could span from 7:00 am to 7:00 pm, Monday through Saturday. The operating hours of businesses along this section of Freeport Road are restricted to daytime hours only. Additionally, the homes in the yellow zone are located on larger parcels and are more likely to have access to off-street parking via a driveway and/or garage. Overflow from the hospital is also most likely to occur during the daytime hours when patients and visitors are on campus.

Conversely, the enforcement hours in the red zone could be limited to the evening hours, starting around 4:00 pm or in effect 24/7. Homes in this zone are located on smaller parcels and are less likely to have access to off-street parking. This area also has a more consistent overflow from the baseball field and commercial districts.

Under the revised RPP program, yellow permitholders could not park on the street longer than the posted time limit in red, and red permitholders could not park there longer than the posted time limit in the yellow zone. Upper Aspinwall residents could not park on the street longer than the posted time limit in either zone.

Again, it is essential to note that the proposed enforcement hours for each zone differ. The yellow zone would be in effect during the day and the red zone in the evening. Thus, residents on the border between the yellow and red zones could still find overflow parking in the opposite zone if needed.

Figure 42: Proposed RPP Districts



Source: Walker Consultants, 2024

The procedure for applying for an annual resident permit should also be reevaluated. The borough requires residents to reapply annually; this practice should be continued. Applications should include, at a minimum, valid vehicle registration and proof of residence within the district, as is the current policy. Walker recommends Aspinwall implement a fee associated with purchasing a permit. We also recommend limiting the number of permits per household to two; however, if a municipality wishes to allow for more than two permits per household, we recommend an escalating fee for each additional permit. Other municipalities have opted to restrict the number of permits based on a household's access to private off-street parking. Additionally, boat trailers, camping trailers, motor homes, and work-type commercial vehicles should not be eligible for parking permits.

The policy around visitor permits and posted time limits should also be reviewed and revised to align with industry best practices. Visitors are limited to one hour on most residential streets unless a visitor pass is issued. The borough should consider extending the one-hour limit to two hours on some streets to accommodate residential visitors. The one-hour limit should remain on streets more immediately impacted by commercial overflow. The policies and practices around visitor passes should be strengthened. We recommend limiting the number of visitor passes issued to residents annually. Visitor passes should only be issued for visitors staying

longer than the posted time limit and should indicate the start and end times of the permit. Some municipalities provide these passes free of charge, while others charge the resident.

Lastly, Walker recommends the borough transition to a virtual permit management system. With a virtual permit management system, the vehicle's license plate becomes the parking credential rather than a sticker or hand tag. Enforcement can then be performed with the borough's mobile license plate recognition system. The virtual permit management system transition is discussed more in the technology section below.

Adopt a Guide for Designating and Monitoring ADA Spaces in Residential Neighborhoods

On-street parking in a public right-of-way that is dedicated exclusively to residential parking is not required to have a minimum number of ADA spaces and is not required to comply with ADAAG's Public Right-of-Way Accessibility Guidelines¹ (PROWAG) R211. Where spaces are not required in PROWAG R211, PROWAG section R310 does not apply. However, where there are no restrictions on parking, spaces are metered or described as "other," the PROWAG Sections 211 and R310 do apply.

Chapter 15, Section 406.1 of Aspinwall's Zoning Code addresses parking signs for disabled persons. Per the ordinance, any disabled person or severely disabled veteran can request the borough erect a sign reserving a parking space on the highway as close to their home as possible. Application for the ADA-designated space must be made annually and approved by the Handicapped Sign Committee. The ordinance does not specify what criteria are used to approve or deny an applicant's request beyond the physical improvement of the applicant or another change in circumstance that would deem the space no longer appropriate. The application is posted on Aspinwall's website under the applications & forms section. A copy of the form is shown to the right. The form requires the applicant to submit a copy of their plate and ADA placard.

Walker recommends that the borough establish criteria for granting an ADA on-street space in a residential neighborhood and share this information on their website, either on the parking webpage or as part of the application document. Peer communities, including the Boroughs of Dormont², Oakmont³, and

Figure 43: Aspinwall Handicap Parking Request

Borough of Aspinwall Handicap Parking Place Request

Applicant Information:

Name		
Address		
	Aspinwall, PA 15215	
Plate Information	#	Vehicle VIN #
Placard Information	#	Expiration Date

Is this a permanent parking request: YES or NO

If no, when is the anticipated end-date: ____/____/20____

REQUIRED ATTACHMENTS: A copy of the Placard including number and expiration date and the identification card must accompany this application. If a HC Plate, rather than a placard is indicated above, then a copy of the current registration card for the vehicle must be provided.

I, _____ herby make application for a Handicap Parking place within the Borough of Aspinwall and certify under penalty of law that ALL information contained herein is TRUE and CORRECT. I also agree to notify the Borough Office within 30 days if the need for the space ceases for any reason so it may be removed. I understand that I must reapply each year in July to keep the Handicap Parking Place.

Signed: _____ Date: _____

Received Aspinwall Borough Office on ____/____/20____ by: _____ (initials)

Placard/wallet card copy or vehicle registration copy is attached: YES / NO

Verification by Police completed by Officer _____ date ____/____/____

Decision of Public Safety: Approved / Denied signed/date _____

Work order installation date/initials _____ Installation date/initials _____

Request for removal by: _____ date: _____

Work order removal date/initials _____ Removal date/initials _____

Source: Borough of Aspinwall, 2024

¹ <https://www.access-board.gov/prowag/>

² <https://boro.dormont.pa.us/wp-content/uploads/2017/04/Reserved-Accessible-Parking-Policy.pdf>

³ <https://oakmontborough.com/persons-with-disability-parking-place-application/>

West Reading⁴, have stated policies and criteria for approving a request for an on-street accessible parking space. Some of these criteria include:

- Completion of the physician's certification of disability,
- Being unable to walk 200 feet without stopping to rest,
- Being unable to walk without the use of a brace, cane, crutch, prosthetic device, wheelchair, or other assistive device,
- Using portable oxygen or having a cardiac condition, or
- Having a neurological condition.

The policies also specify that the applicant must be able to show that off-street parking is unavailable or unsuitable. When reviewing the application, the committee or other designated person should also confirm that the number of ADA spaces on any one block does not exceed 10% of the available supply.

The borough legal council should review any changes to the borough's policies and practices regarding the designation and monitoring of on-street ADA spaces in residential neighborhoods before implementation, as Walker is not a legal consultant.

Adopt a Guide for Restriping/Reconfiguring On-Street Parking

Walker completed a high-level review of the dimensions of the existing on-street parking in Aspinwall. At the parallel spaces surveyed, the average length of the stall was between 21 and 22 feet. When recommending parking stall dimensions, Walker uses a level-of-service approach to parking design, correlating qualitative measurements to the relative quality of service. These metrics, including stall width and length, travel aisle width, angle of parking, turning radii, etc., are graded based on the size of the US design vehicle. For a LOS A at a parallel parking space, Walker recommends a 23-foot long by 9-foot wide stall with a 16-foot aisle. A shorter or narrower stall is still acceptable, with the understanding that the level of service experienced is reduced (i.e., parking is more challenging). Unless Aspinwall were to reduce the length of the stall to 20 feet, which would impact people's ability to park, they are unlikely to gain additional parallel spaces. Also, consider that 20 parallel spaces would have to be reduced in length by one foot to gain one extra space on the street.

Based on our assessment, the existing on-street parking has been maximized with parallel parking as it exists today. Without a civil survey, it is unclear where the right-of-way is located on each street; however, converting parallel parking to angled parking along the curb requires approximately 30 feet wide from curb to curb. As part of our assessment, Walker considered the impact of converting the parallel spaces along 3rd Street to angled parking. Between Western and Central Avenues, 3rd Street is about 26 feet wide and accommodates 48 parallel spaces. If the borough could capture an additional four feet of width from the existing greenspace at the curb, and 45-degree angled parking spaces were installed on one side of the street, only 42 spaces could be developed, a net loss of six spaces compared to today's supply.

⁴ https://www.westreadingborough.com/sites/g/files/vyhlf5201/f/uploads/resolution_2022-9_handicapped_parking_policy.pdf

Alternatively, Walker recommends developing and implementing standards for clear parking zones that can be applied after a street is disturbed by construction. Title 75 of Pennsylvania’s Consolidates Statutes prohibits parking within:

- 15 feet of a hydrant
- 30 feet of an intersection
- 20 feet of a crosswalk
- 20 feet of a fire station driveway
- In front of a public or private driveway

The cost associated with redesigning a street is substantial, and the process is lengthy, likely involving multiple departments and outside agencies. Before undertaking any changes to traffic direction or on-street parking configuration, Aspinwall should consider the following:



Street Width

Is the street wide enough to accommodate a parking lane?
Will redesigning the street create a sidewalk and a landscape strip?
Is there a need for a bike lane?



Traffic Direction

Is the street currently a one-way or two-way road?
Does formalizing parking change the number of vehicular lanes on the street?
How does converting to a one-way street impact traffic in the area?



New Development

Is there a new development project in the area?
Will the new development need/use the on-street parking?
Can the developer financially contribute to the street redesign project?



Roadway Projects

Is there another construction project scheduled?
Will the roadway already be ripped up?
Does redesigning the roadway support the construction project?

There may also be other criteria Aspinwall values in the decision-making process. For example, suppose a sustainable and walkable community is essential. In that case, there may be value in choosing streets that will

safely connect pedestrians or cyclists to community trails or bus stops. Another factor to consider in the guide/decision-making process is EV charging. Is there a need or demand for an on-street EV charging station on the street? As more multi-family and affordable housing options are built, particularly with less off-street parking, access to EV charging stations in the residential district will become a factor.

Parking Management

Introduce a St. Scholastica Parking Permit

St. Scholastica staff and visitors park on 3rd and 4th Street, Brilliant Avenue, and Maple Avenue. While these streets are part of the RPP, no signage indicates residents only or a one-hour restriction. With no signage prohibiting on-street parking, Walker understands the area serves as pseudo St. Scholastica parking. The RPP is generally not enforced in the area. Assuming the borough adopts the recommended changes to the RPP program, and those regulations are regularly enforced, an alternative is needed for the St. Scholastica faculty and staff. The borough could create a St. Scholastica parking permit, like the Merchant Lot permit, allowing faculty and staff to park longer than two hours on select streets. Presumably, they would continue to park along 3rd Street, 4th Street, and Maple Avenue. The permit cost should be equal to the price of the Merchant Lot permit and only valid for specific hours during the week. All permitted parkers should be migrated to a virtual permit, with license plates on file with the borough as the specific parking credential for each parker.

Visitors staying less than two hours, including those attending mass or school functions, could legally park for up to two hours per the regulations of the RPP program. The school would be responsible for facilitating visitor permits for any volunteers staying longer than two hours.

There is also signage on 3rd Street and Brilliant Avenue indicating no parking between 2:00 pm and 3:00 pm on school days to accommodate student pick-up. Lastly, 3rd Street becomes a play street at lunchtime. These restrictions would not change with the introduction of a St. Scholastica Parking Permit or the proposed changes to the RPP program.

Update Metered Parking Rates

A business district's on-street parking spaces are its most valuable parking spaces. These spaces are the lifeblood of street-level retail, restaurant, and service businesses that municipal government tries to support and attract. Ideally, as a business district's most valuable spaces, the rates for on-street spaces should set the pace for off-street and structured parking prices. If on-street parking is priced too low, it becomes difficult to encourage the turnover of these spaces and the use of off-street facilities. If parking on-street is available at no cost, it encourages misuse by business owners, employees, visitors, and those seeking a no-cost alternative. On-street spaces should be priced higher than off-street spaces.

Revenues generated from paid parking should be used to create a self-sustaining parking system that, to the greatest extent possible, generates a revenue stream from parking customers that is sufficient to cover ongoing operating and maintenance expenses. Excess revenue should fund parking and other transportation-related capital and operational improvements that enhance access to and within downtown. Additionally, rates should be set at a level that does not deter patrons from using the space. If rates are set too high, patrons could park in unmanaged neighboring residential areas, creating conflicts between downtown and residential parking demand.

When setting parking rates, a municipality should consider the following:

- Transparency and ease of understanding
- Utilization of the parking facilities
- Reducing traffic and congestion in the downtown core, and
- Balancing the needs of locals and visitors.

As noted in the existing condition section, the hourly rate charged at all meters (on- and off-street) varies depending on whether a parker pays with cash or using ParkMobile. The ParkMobile rate is \$1 per hour, while the cash rate is \$0.50 per hour. At a minimum, Walker recommends standardizing the meter rate to \$1 per hour across payment types at both the on- and off-street spaces. Ideally, the hourly rate at on-street meters should be greater than off-street meters to encourage turnover at the curb.

Before implementing different on- and off-street rates, Walker first recommends increased and consistent enforcement of the parking system. Anecdotal information suggests that on-street metered spaces are poorly monitored and often occupied by employees or other long-term parkers all day. Regular enforcement of the spaces should encourage turnover without the negative connotations of increasing parking rates. Enforcement should also be made easier by the borough's recent purchase of a mobile license plate recognition (mLPR) system which integrates with ParkMobile.

With the increase to the hourly cash rate at parking meters, the borough may want to consider replacing their existing manual meters with smart meters that accept both coin and credit cards or parking kiosks/multi-space meters as a long-term strategy. While the existing meters are older, they are still functional. However, most parkers do not carry the \$2 worth of quarters needed to pay for two hours of parking. Increasing the hourly cash rate at the meter may also encourage greater use of the ParkMobile payment system, ultimately reducing the amount of coins collected and the time and cost associated with regular collection.

Emphasize Consistent and Fair Parking Enforcement

The success of time limits or paid parking is highly reliant on active and consistent (and fair) enforcement. Policies that cannot be or are not enforced have little value. When formulating a policy, it is important to understand the limitations of enforcement. Staffing levels, enforcement times, and possible coverage areas should be evaluated, as should the desired result from policy compliance. These factors can be increased if merited, but an associated cost is related to increased enforcement.

Additionally, enforcement's goal should be education and compliance, not generating revenue. Overall, enforcement should be used to encourage parking patrons to use spaces correctly, deter long-term parkers from using time-limited spaces, and deter payment evasion. Revenue collected from citations should be used to offset the cost of enforcement personnel, parking operations, and maintenance, not as a primary source of program revenue. Implementing sensible policies, having a variety of convenient payment options, and having clear signage and wayfinding (all strategies recommended in this plan) increase customer compliance and decrease the need for punitive enforcement.

Again, Walker understands the borough recently purchased a mLPR system. This technology, paired with a virtual permit management system and ParkMobile, should significantly improve the police department's efficiency and effectiveness when enforcing parking regulations in residential and commercial districts.

Educate, Advocate for, and Facilitate the Development of Shared Parking Agreements Between and with Local Business

Walker recommends that the borough pursue shared parking agreements with private property owners and encourage shared parking agreements between businesses to increase the area's available "public" parking supply. In effect, the public sector would encourage private demand generators to work with private property owners to solve their parking needs without burdening the borough. One example is the Coldwell Banker Realty lot at the corner of Freeport Road and Brilliant Avenue. The business utilizes the lot during the day but is closed in the evening. Several businesses are within one block with evening hours and no on-site parking. Access to this lot could supplement the less preferred parking along Freeport Road.

The borough already leases parking from a private business for use by the public sector, a type of shared parking arrangement. An agreement exists for five (5) permitted parking spaces in the lot at the corner of 1st Street and Western Avenue. However, the spaces aren't signed or advertised, making it difficult for visitors to use them at night and on weekends. If publicized, these spaces could supplement the baseball field's needs.

There are several reasons why shared parking is such a beneficial approach:

- From an environmental perspective, it is always preferable to make good use of existing parking resources before building additional ones.
- From an aesthetic perspective, adding to the existing checkerboard of surface lots is not desirable. Parking is not conducive to the community's historic charm and walkable character. Additionally, while a garage would consolidate parking and reduce the surface area devoted to parking, it is usually an expensive option and may not be warranted yet.
- From a financial perspective, owners may be relieved of insurance and other operating costs. At the same time, the borough gets parking without spending the large amount of money needed for a garage.

Many businesses express concern over not having enough parking for their customers or employees today and worry that sharing their limited supply will harm business. The key is to find complimentary businesses and establish and enforce clear restrictions. The borough may have to assist with this by providing enforcement or stepping in as a partner in the agreement.

Currently, parking is free after 5:00 pm, making it difficult to provide a user-based financial incentive for property owners. Without a financial incentive for businesses to pool their parking, the borough can only continue offering information and resources to those individuals interested in organizing shared parking arrangements between themselves or the borough. Examples of information and resources include:

- Sharing the findings and recommendations of the parking study with the business community;
- Informally collecting parking occupancy data at different times of the day/week at a particular business that is potentially interested to show parking availability;
- Offering assistance with negotiating strategic agreement components, such as:
 - Compensation in the form of increased lot maintenance, lot improvements, added security, etc.
 - Restricting access to the shared parking via permits to area employees to reduce risk and increase accountability
 - Defining any added security or enforcement measures necessary to ensure that the primary uses of the lot are prioritized

- When feasible, stepping in to remove barriers to viable agreements, which commonly includes assuming added liability insurance costs related to the agreements; and
- Providing a sample shared parking agreement.

The borough could provide a financial incentive for shared opportunities during the day. A paid parking program in the shared lot could be used to generate and share revenue with a partnering business or property owner, as was done in West Reading, PA. Many communities rely solely on mobile payment applications like ParkMobile in these situations. Through a shared parking arrangement, the borough would install and enforce the paid parking lot/zone on the private business' lot. The property owner's business would share in the revenue generated through the use of the lot.

West Reading Shared Parking Case Study

The Borough experienced modest but steady growth in the downtown area, with numerous restaurants operating along Penn Avenue, partly due to eliminating off-street parking requirements for businesses in the Central Business District. While parking demand grew downtown, the parking supply did not. The largest parking source in the Central Business District was the approximately 200-space West Reading Shopping Center on the 500 block of Penn Avenue. The lot was the de facto “public” parking downtown due to its capacity, general vacancy, central location, and lax enforcement of posted restrictions.

The property owner grew frustrated with the increasing number of drivers illegally parking in his lot for downtown visits. Signage was posted identifying the lot as reserved for patrons of the adjacent businesses. The owner then engaged a towing contractor to remove vehicles parked in the lot late at night, which, while within his rights, adversely affected restaurants and bar establishments along Penn Avenue.

After more than a year of negotiations, the Borough reached an agreement with the Shopping Center concerning public usage of the private lot. The Borough secured a \$50,000 grant from the BB&T Economic Growth Fund of Berks County Community Foundation and used part of the funds to install signage and two multi-space meters in the lot. Approximately 100 public spaces have been made available for \$1.00 per hour.



The agreement has been in place since September 2019 and is considered an overall success. Per the terms of the shared parking agreement, the Borough was responsible for all costs associated with installing the meters, as well as liability insurance. The Borough is also responsible for enforcement of the lot and keeps the citation revenue. The Borough and the property owner split the revenue 50/50. The shared parking agreement also requires the lot to be empty between 3:00 am and 6:00 am, primarily to prevent long-term parkers from utilizing the lot.

The kiosks accept coin and credit payments, and the Borough also accepts payments through the MobileNow app. Per West Reading, the lot generated between \$2,500 and \$3,000 in revenues per month from September 2019 to March 2020. Approximately 60% of revenue is collected via the MobileNow app. The Borough also reports interest from a second private lot owner in entering into a shared parking agreement.

While overall successful, the Borough reports some issues, including overflow demand on residential streets where parking is still free. This is assumed to be employee demand, and the Borough is looking for an alternative (and free) lot for this user group.

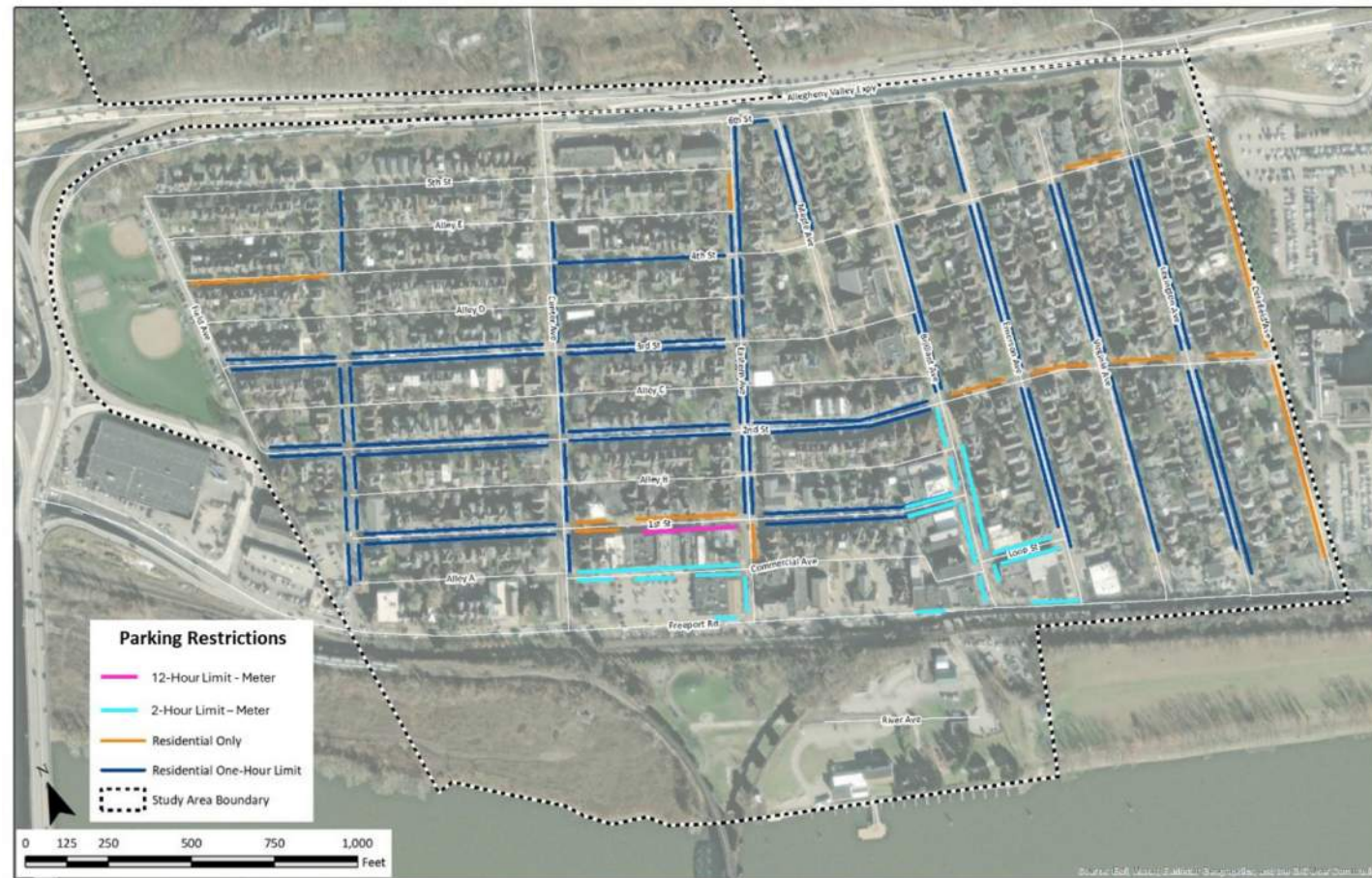
Review Time Limits

The two-hour time limit at on-street meters and the 12-hour time limit in off-street lots and on-1st Street are appropriate. On-street parking in commercial districts should turn over more frequently, while long-term parkers should utilize the off-street options. Outside of the commercial core, a one-hour time limit is in effect on most streets, as shown in the first map on the page below. While all the residential streets in Lower Aspinwall participate in the RPP program, there were no posted time restrictions on some.

Walker recommends reviewing the posted one-hour time restrictions in the residential areas. While the one-hour time limit protects residential parking from commercial or recreational overflow, it also restricts residents' ability to host personal visitors without obtaining a visitor pass. With the proposed changes to the RPP program and more consistent enforcement associated with the recently purchase mLPR, Walker recommends extending the time limit on some streets in the RPP zone to two hours. The second map on the page below shows the recommended changes to the posted time limits in Lower Aspinwall.

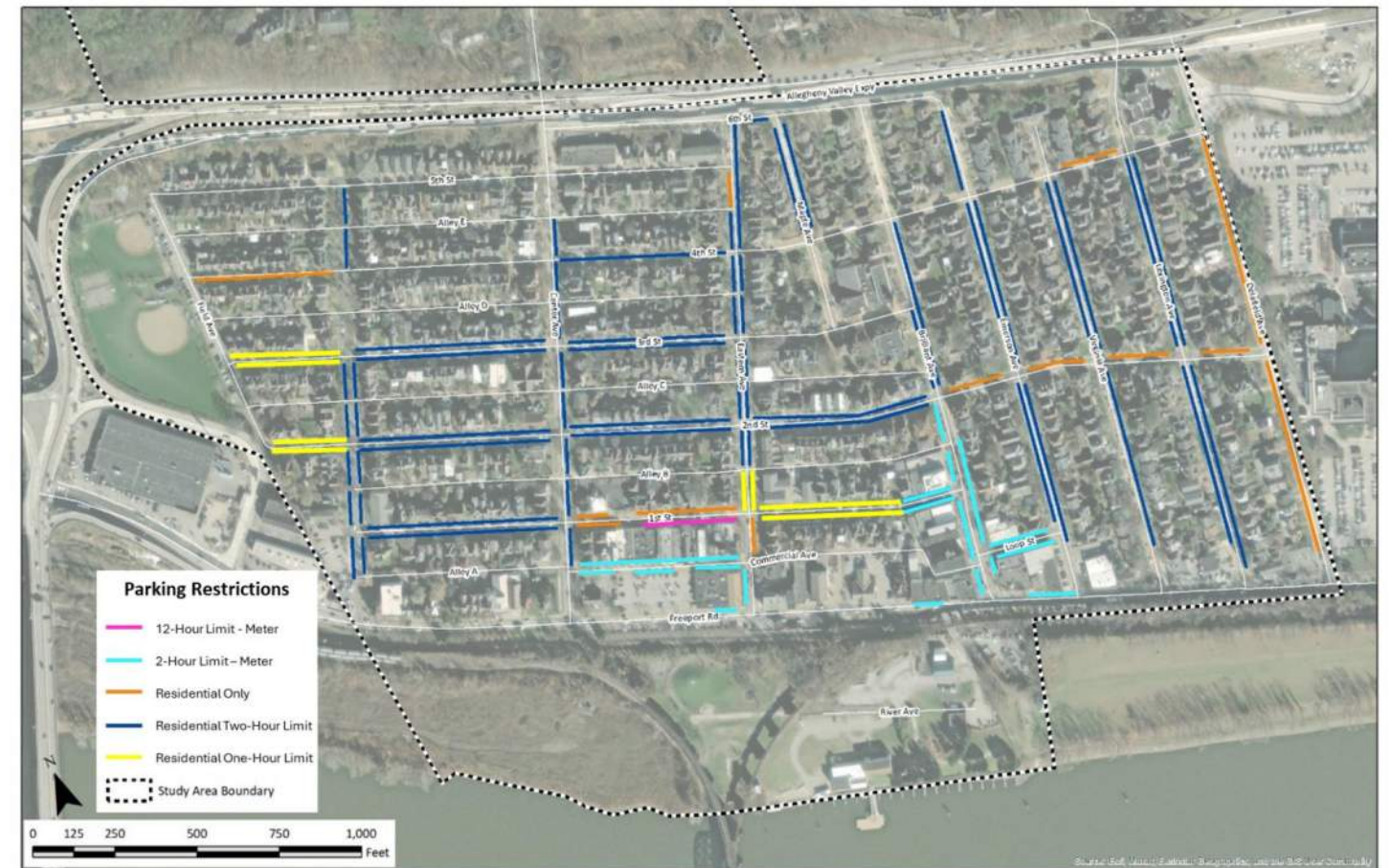
The streets closest to the baseball field would maintain their resident-only or one-hour time limit to help manage overflow from the baseball field. Similarly, 1st Street between Eastern and Brilliant Avenue and Eastern Avenue between 1st Street and Alley B would maintain the one-hour time limit to manage overflow from the commercial core. Delafield Avenue and portions of 2nd Street would maintain their resident-only status. All other streets in the RPP district would become two-hour time-limited spaces.

Figure 44: Current On-Street Time Limits



Source: Walker Consultants, 2024

Figure 45: Proposed On-Street Time Limits



Source: Walker Consultants, 2024

Monitor and Modify Hours of Enforcement

Walker recommends that the borough monitor the utilization of on- and off-street parking in the commercial districts at regular intervals. Currently, there is no need to extend the enforcement hours in the metered locations. However, suppose there is a shift to land use with more evening activity and the utilization of the on-street parking and Commercial Street Lot significantly changes. In that case, Aspinwall may want to extend their enforcement hours in the metered locations.

When and if this policy change is implemented, providing a free parking alternative is crucial. This free option could be the permitted spaces across Freeport Road and/or the Merchant Lot. As discussed earlier in the recommendation section, in an ideal environment, customers want free, convenient, and plentiful parking. However, in practice, only two of these three criteria can be met at any time. If a customer does not want to pay to park in the most convenient spaces, they can choose free spaces that are slightly less proximal to their destination.

Zoning Requirements

Revise Parking Geometrics for On- and Off-Street Parking

Chapter 27, Section 409 of Aspinwall's municipal code details the geometric design standards for off-street parking. The size of a conventional space is specified as nine feet wide by 18 feet long, exclusive of curbs and maneuvering space. The dimensions of an ADA space are 12.5 feet in width and 20 feet in length. Walker did not find references to on-street or parallel parking space dimensions or angled space dimensions in the ordinance. As the Commercial Street Lot is angled, it is assumed that angled parking is allowed.

The geometric design standards outlined in Aspinwall's zoning code should be updated to more closely align with the standards espoused in the National Parking Association's (NPA) *Recommended Zoning Ordinance Provisions*, which Walker also helped create using the LOS system. Currently, the borough only specifies 90° parking space dimensions. We recommend allowing for 70° angled parking with one-way traffic flow as an alternative option and defining the dimensions of parallel spaces. The figure below compares Aspinwall's zoning requirements to different LOS dimensions for three stall angles.

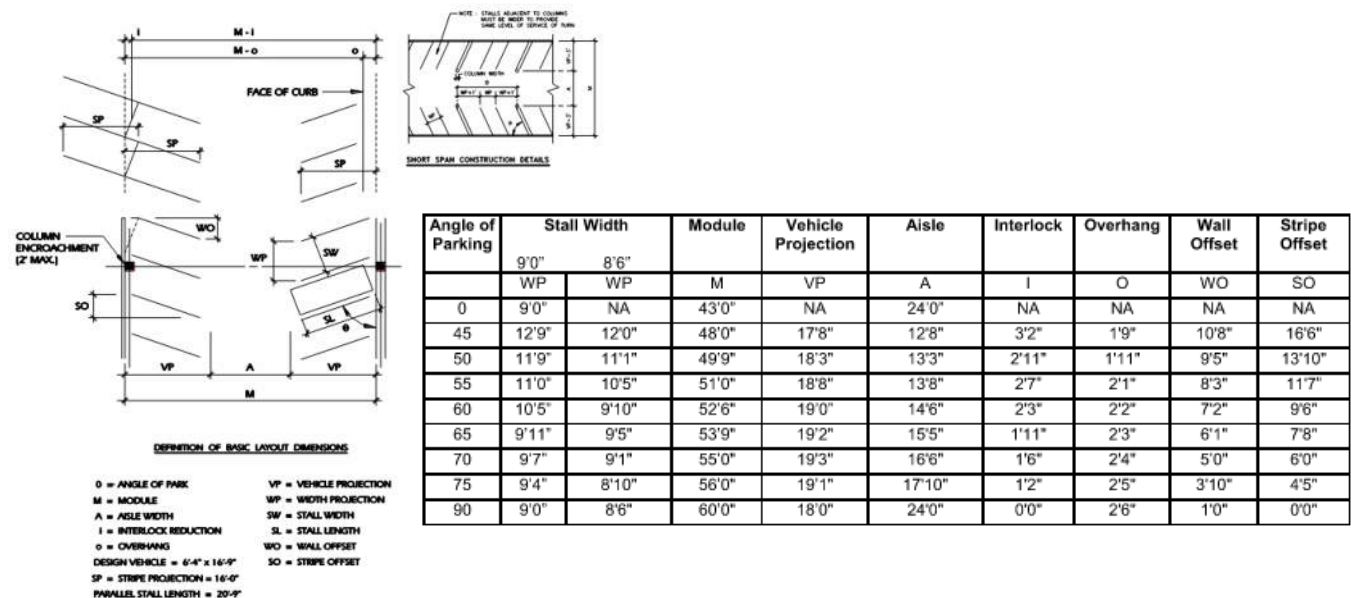
Figure 46: Recommended Parking Dimensions

Type	Stall Angle	Stall Width	Drive Aisle	Parking Module
Aspinwall Zoning	90°	9'-0"	N/A	N/A
Walker (LOS A)	90°	9'-0"	26'-0"	61'-6"
Walker (LOS B+)	90°	9'-0"	24'-0"	60'-0"
Walker (LOS C)	90°	8'-6"	24'-0"	59'-6"
Aspinwall Zoning	N/A	N/A	N/A	N/A
Walker (LOS A)	70°	9'-0"	18'-6"	56'-6"
Walker (LOS B+)	70°	9'-0"	17'-6"	55'-6"
Walker (LOS C)	70°	8'-6"	16'-6"	54'-6"
Aspinwall Zoning	N/A	N/A	N/A	N/A
Walker (LOS A)	0°	9'-0"	N/A	23'-0"
Walker (LOS C)	0°	8'-6"	N/A	21'-0"

Source: Walker Consultants, 2024

For reference, Walker also included a sample module with the various dimensions labeled and a table with alternative angled parking dimension recommendations.

Figure 47: Recommended Parking Dimension



Source: NPA Recommended Zoning Ordinance Provisions, 2012

Update Minimum Parking Requirements for Residential Uses

Through discussions with leadership, Walker understands the borough is considering several changes to the ordinance in response to recent challenges it has faced. Walker commends the borough for taking a holistic approach to updating its zoning mandates and addressing needs unique to Aspinwall. As part of this holistic approach, Walker reviewed the minimum parking requirements for residences. Other consulting firms are examining standards for converting single-family homes to multi-family apartments.

Per the borough’s code, residential uses must provide two spaces per dwelling unit. Aspinwall does not provide for different types of residential uses such as single-family, multi-family, senior housing, or accessory dwelling units in their zoning ordinance.

Industry best practice recommends a system based on the number of bedrooms per unit rather than a flat mandate per dwelling unit. The intention is to allow for the development of ample parking but not mandate the over- or under-building of parking. Overbuilding of parking is well documented in towns across the country and results in myriad negative consequences, including discouraging growth. Underbuilding could put additional stress on the existing on-street parking system. Walker also recommends that the borough consider different minimums for different types of residential space. The table below outlines the recommended minimum parking requirements for four different types of residential spaces.

Table 22: Recommended Minimum Parking Requirements for Residential Uses

Land Use	Recommendation
Single Family Attached/Semi-Attached/ Detached Residential Dwellings	2 spaces per each single-family dwelling unit
Multiple-Family/ Two-Family Residential Dwellings	Efficiency/Studio – 1 space per unit
	One-Bedroom – 1.05 spaces per unit
	Two-Bedroom – 1.80 spaces per unit
Accessory Dwelling Unit	1 space per unit
Active Senior Housing	0.85 spaces per unit

Source: Walker Consultants, 2024

Below is sample language to define terms not already included in the zoning ordinance's definitions section. The borough’s legal counsel should review the definitions.

Active Senior Housing

Independent living developments that are called various names including retirement communities, age-restricted housing, and active adult communities. The development has a specific age restriction for its residents, typically at least 55 years of age for at least one household resident. Each housing unit shares a floor or ceiling with an adjoining dwelling unit. Residents in these communities are typically considered active and require little to no medical supervision.

Accessory Dwelling Unit

A residential dwelling unit located on the same lot as a single-family detached dwelling, single-family semidetached dwelling, and single-family attached dwelling unit which provides complete independent living facilities for a maximum of two persons. It may take various forms: a detached dwelling unit, a dwelling unit that is part of an accessory structure, such as a detached garage, or a dwelling unit that is part of an expanded or remodeled principal dwelling unit. The adaptive reuse of a historic carriage house for an accessory dwelling unit shall not be considered an ADU.

Monitor the Need to Prohibit/Limit the Leasing of Parking to Non-Residents

Pennsylvania's housing stock is some of the oldest in the country, with approximately 40% of existing homes built before 1950 and 25% built before 1940⁵. This is no different for Aspinwall, where 61% of housing was built before 1940. And, because much of the housing stock was built around or before the automobile became commonplace, the size of a home/parcel is mismatched with the size of a vehicle. Many parcels in Aspinwall's residential districts are just wide enough for a single car, while the average number of vehicles per household, according to the US Census, is about 1.5. Access to private off-street parking is also limited.

The borough requires new residential development to provide off-street parking (two spaces per unit). However, a landlord is not restricted from charging their tenant to use that parking space. Many tenants choose to park for free on-street rather than pay for off-street parking. As a result, utilization of on-street parking increases, and the landlord finds another non-resident party to rent the parking space. Often, the parking space is rented by a non-resident, further perpetuating the shortage.

Some communities have chosen to include provisions in their zoning code that restrict or limit the use of residential parking to tenants or occupants of the buildings. These are typically larger cities like San Francisco, New York City, and Cambridge. Before Aspinwall considers modifying their ordinance, Walker recommends adopting other ordinance changes and revising their parking policies. One such option is modifying the zoning code to limit or prohibit the conversion of single-family homes to multi-family homes. Another option is to implement changes to the RPP program. Charging for a residential permit and/or limiting the number of permits issued per residential property (i.e., a converted single-family home is considered one, regardless of the number of subdivided dwelling units) may encourage private off-street parking.

Simplify Language in the "Shared Parking" Portion of the Zoning Ordinance

Aspinwall's zoning ordinance (Chapter 27, Section 409) allows for shared parking without calling it shared parking. The language used in the ordinance is shown below.

Multiple Parking Occupancy. When a number of different uses or businesses are proposed within a structure, facility or complex on the same zoning lot, and when it can be demonstrated that one or more of such uses require parking spaces at times other than normal business or operating hours for other uses, the applicant may present to the Planning Commission a written report stating that a maximum combination of all such uses will not require that total accumulative parking spaces required by this chapter. If the Planning Commission, after review, determines that a reduced overall parking requirement can satisfy the off-street parking needs of the combined facilities, the applicant shall be permitted to reduce the parking spaces provided in accordance with the plan approved by the Planning Commission.

Walker recommends updating and simplifying the ordinance's language, similar to that used by Montgomery County, MD.⁶

⁵ https://www.phfa.org/forms/housing_study/2023/phfa2023report_final.pdf

⁶ <https://www.montgomeryplanning.org/development/zoning/documents/FULLCh59APPROVEDclean3.5.14.pdf>

“An applicant proposing development with more than one use may submit a shared parking analysis using the current version of the Urban Land Institute Shared Parking Model instead of the parking table in Section X.”

Montgomery County offers shared parking as an alternative to reduce the parking requirement. The Borough of West Chester, PA⁷ has eliminated parking minimums, except for residential and hospital uses, and instead requires a shared parking study to be completed. Their zoning code language is more robust than Montgomery County’s and references the Institute of Transportation Engineer’s Parking Generation Reports and ULI’s Shared Parking Study. While Aspinwall could use the same approach as West Chester in the future, Walker first recommends simplifying and encouraging the use of the shared parking ordinance.

Technology

Procure a Mobile License Plate Recognition System for Enforcement

Adding Mobile License Plate Recognition for parking enforcement to automatically identify, check the plate, and electronically chalk vehicles based on their plate and GPS coordinates. Each area within Aspinwall can be zoned based on the parking regulations. This may include permit only (with plate info in a database), time limit, meter payment (if pay-by-plate), or all the above.

In a typical scenario, the mLPR vehicle drives the area throughout the day to check vehicle plates for permits and to record an initial parking session to track the length of stay. As the enforcement vehicle passes the area later, it automatically identifies and alerts vehicles that do not have a permit and have stayed beyond the posted time limit within the zone. The alert provides a date/time stamp of the original recording of the vehicle along with a second date/time stamp of the second recording showing the extended time parked. The enforcement officer can decide to ignore or enforce the violation, including photographic proof of the violation.

Posted time limits should be monitored and enforced to be effective. Typical enforcement methods include physically chalking tires or electronically tracking vehicle license plate numbers at intervals relevant to the posted time limits. The latest technology for tracking length of stay is a vehicle-mounted License Plate Recognition (LPR) system.

Genetec and Vigilant (Motorla)

AIMS, Genetec, T2 Systems, and Tannery Creek Systems are examples of firms that offer a vehicle-mounted LPR system that includes special vehicle-mounted cameras and software to capture the plate and vehicle location. As an option, some systems can capture the wheel stem location as the enforcement vehicle drives past the parked vehicle. A computer mounted inside the vehicle records the data and GPS position, checks the data to determine if the vehicle was previously parked, and determines the length of stay. In addition, plates can be compared to a database of permit parkers or a list of wanted vehicles for other violations and additional corrective action.

⁷ <https://ecode360.com/6472971>; Chapter 112-603 Parking Space Requirements

Our opinion of the cost for one LPR vehicle-mounted system is \$45,000 - \$60,000, plus the cost of the vehicle and ongoing software service agreements for cloud-based management access. The systems can be deployed on most regular passenger vehicles, pick-up trucks, and even specialized golf cart-sized enforcement vehicles.

Another option is to use handheld electronic devices to manually scan each plate and allow the user to verify the plate number. These systems can sometimes be augmented using a smartphone as an enforcement device. While not as rugged or efficient as the actual handheld device, smartphones can be a lower-priced option to increase the number of units if needed.

Handheld systems typically cost about \$5,000 per unit plus an ongoing fee for cloud-based services and software updates. Leasing this type of system may be an option that significantly reduces the initial investment and is based on the number of units in service.

Transition to a Virtual Permit Management System

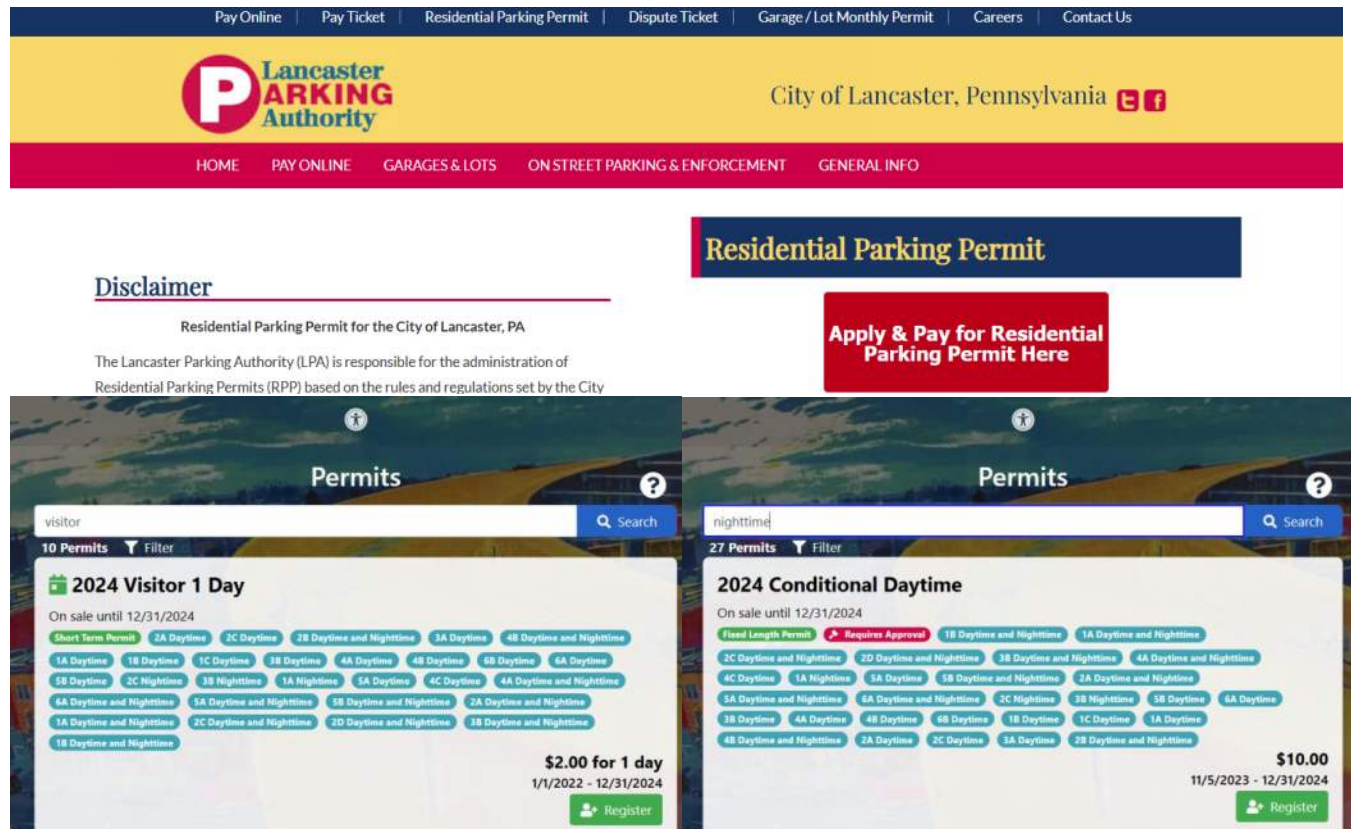
The borough should implement/procure a virtual permit management system (VPMS) and transition the existing physical permit to a virtual permit, using the plate as the permit. This transition can be made over the year, with the application process to include providing the license plate number associated with the permit. In conjunction with this VPMS, a mLPR can enforce all on-street and off-street parking areas. An overhauled residential parking permit program and employee permit program (as recommended above) would be managed with the mobile LPR and VPMS.

Miami Beach, Florida, did this with its residential parking permit program as they provided a visible physical permit while also associating the plate number with the permit many years ago. This allowed for both physical and virtual checks for authorized vehicles as the system moved to a virtual system.

Expand Online Permit System

With the move to mLPR and virtual management system, using the license plate as the permit, Walker recommends Aspinwall expand their online permit system to purchase and manage all on- and off-street parking permits. Currently only the Merchant Lot permit can be purchased through ToCite. Many communities like Easton, West Chester, Lancaster, and Dormont use ToCite for online permit management. An online permit system will allow residents to set up an online account for self-management, update their plate number, and add visitor passes (using the plate number) online. An online permit system streamlines the administrative process, making the service more efficient. It also provides a higher level of customer convenience, as patrons no longer have to visit the office and wait in line to purchase the permit.

Figure 48: Example Online Residential Permit System



Source: Lancaster, PA ToCite Online Permit System, 2024

The existing UPSafety contract lists Patron Portal for purchasing permits online. A per-permit fee will be passed on to the user per the contract.

Maximize UPSafety Software

When a vehicle with an out-of-state plate is issued a citation it may not be paid or collected as there is no owner data. T2, the parent UPSafety company, offers the ability to look up out-of-state plates and mail invoices for collection. There is a small fee per successful lookup as well as for mailing invoices. This may generate some additional revenue while cleaning up some of the outstanding citations.

UPSafety offers Work Orders to enable customers to report broken meters, request no parking signage or bagged meters. These are additional features that may be worth a discussion with T2 to maximize the use of the existing UPSafety platform.

Infrastructure Improvements

Add Bike Lanes/Bike Racks

Just as cars need a place to park, so too do bicycles and scooters. Unfortunately, Walker noted just one rack in front of Borough Hall. With the recent and planned improvements to the Allegheny RiverTrail Park, utilization is expected to increase, bringing more visitors to Aspinwall. More visitors that will shop or enjoy a meal before returning to the trail or at the end of their ride. Many of these new visitors are likely to arrive by bike. The addition of bike lanes and crosswalks on Freeport Road is discussed in later sections, but once a bicyclist crosses Freeport Road, they will need a place to store their bike.

In the short term, the borough should identify key demand generators and install bike racks to accommodate visitors from the trail. Possible locations include Eastern and Brilliant Avenues. The image to the right shows a portion of the curb that is already cordoned off but accessible from both the street and the sidewalk. In the long term, the borough could consider a bicycle master plan to better coordinate with the more extensive network created by the Rails to Trails program.

Figure 49: Example Bike Rack Location



Source: Google, 2024

Consider a Structured Parking Solution for Long-Term

Walker's analysis of current and future parking demand in Upper and Lower Aspinwall suggests that a structured parking solution would be premature. There is sufficient capacity in the Commercial Street and Merchant Street Lots and along Freeport Road to meet future needs during typically busy conditions. Instead, there is an imbalance between where parking is available and where people want to park. Before pursuing a structured parking solution, Walker recommends that the borough focus on parking management strategies aimed at improving the efficiency of its existing parking system. Changes to the RPP program, better enforcement, adjustments to the parking rates, and better communication are all strategies the borough should implement before considering an expensive structured parking solution.

Another consideration when pursuing a structured parking solution is finding an adequately sized parcel of vacant or underdeveloped land. Most of Aspinwall is developed. Unless the borough purchases and demolishes existing buildings, the Commercial Street Lot is the most likely candidate for a structure. The typical parking module (drive aisle with parking on both sides), assuming two-way traffic and 90° angled parking, is about 60 feet wide. With 70° angled parking and one-way traffic, like the existing layout of the lot, the width of the parking module can be reduced to about 56 feet. A two-bay parking structure needs between 112 and 120 feet, not accounting for zoning setbacks. The Commercial Street property is approximately 113 feet wide. While the property is wide enough for structured parking, the structure's design may be less efficient, impacting both cost and user experience. Additional assessment is needed if or when the borough chooses to pursue this option.

Two conceptual options were developed for the Commercial Street site to illustrate the potential for adding structured parking.

Option 1 is a traditional two-bay, single-threaded helix with two-way traffic. This option could include retail space in one bay on the ground floor and a non-parked ramp to the second floor, where parking would start. The site's width only allows for one full and one-half bay with parking, which is less efficient than two full parking bays.

Any added parking would need to replace the existing parking supply before a net gain is realized.

Option 1 includes:

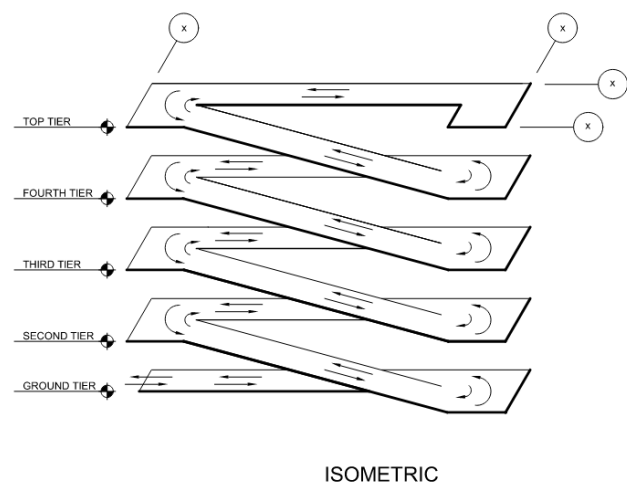
- 90° two-way traffic/parking
- One and a half bays for parking
- Typical 11' – 0" floor-to-floor height to maintain 6.5% or less slope for parked ramp
- The ground level would likely be an express ramp due to ADA requirements for clearance heights or if retail space needs higher ceilings than 11'. Express ramps cannot be parked.
- Approximately 61 spaces per typical level, as shown
- LOS A (for parking comfortability, not efficiency)
- Retail space would be on the opposite side of the ramp

Figure 50: Commercial Street Site



Source: Walker Consultants, 2024

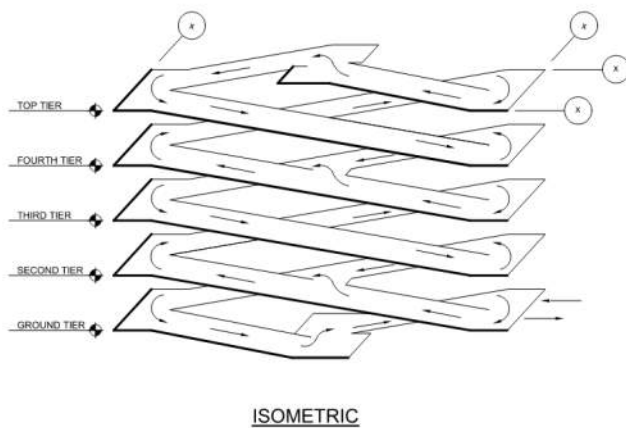
Figure 51: Option 1 Conceptual Parking Structure



Source: Walker Consultants, 2024

Option 2 for this site is focused on maximizing the number of spaces. A double-threaded helix design increases parking, using one-way traffic to circulate the structure. This design does not allow retail space on the ground level.

Figure 52: Option 2 Conceptual Parking Structure



Option 2 includes:

- Angled one-way parking.
- Two bays
- Double thread ramp system
- Approximately 78 spaces per level
- No retail space would be possible with this option
- This option would be the most efficient for the footprint

Source: Walker Consultants, 2024

For conceptual planning purposes, our opinion of the construction costs (excluding soft costs, land, and demolition costs) for an above-grade parking structure is \$32,000 to \$36,000 per space in current dollars, given the site's efficiency with modest architectural treatments. Assuming soft costs are 20 percent of construction costs (the typical range is 15-20%), the total project costs per space would total over \$43,000 (rounded).

Consider Redesigning the Recreational Area to Add Surface Parking

While a structured parking solution is not needed currently, the borough has a localized parking shortage around the recreational area, which is expected to worsen with new pickleball courts. The design outlined in the Master Plan could be modified to include a surface parking lot on the southern end of the property, replacing the proposed nature area while preserving the fire department's storage facility. The figure on the following page shows a conceptual layout for the proposed lot. Based on the conceptual plan, a lot at this location could add roughly 66 spaces to the public parking supply. If possible, Walker recommends coordinating the construction of the lot with the construction of Phase 1 of the Recreational Area master plan.

Because of the orientation of the existing baseball field, the added lot would not be possible without impacting the field of play. A smaller parking area could be considered, and the borough may want to consider protective netting to prevent vehicle damage if the existing ballfield orientation is not first changed per the Recreational Area master plan. Preliminary order of magnitude costs associated with surface lot construction range from \$6,000 to \$8,000 per space for a paved lot with curbs, lighting, and drainage. This could vary depending on soil conditions and utilities. The cost of land, ballfield re-orientation, and netting is not included in the per-space cost.



Source: Walker Consultants, 2024

Several stakeholders referenced competition between residents and visitors for parking in this area, reflected in Walker’s survey day observations. Walker observed residents parking along Field Avenue and visitors parking in the residential neighborhood. The borough would need to establish and enforce regulations for the new parking lot, which may include no overnight parking.

Redesign Parking Along Freeport Road and Add Crosswalks

While the Freeport Road Safety Study was published in 2019 and addresses various safety issues, including lighting, ADA requirements, crosswalks, pedestrian access, signage improvements, and traffic mitigation, it did not explicitly address parking concerns and challenges. Additionally, since the report was published, the Public Right of Way Accessibility Guidelines (PROWAG) was adopted on July 3, 2024.

There are around 80 non-parallel parking spaces on the southern side of Freeport Road, excluding the metered “lot”. Some of these spaces are located under the defunct railroad trestle, but most are uncovered. There are no sidewalks or bike lanes along the south side of Freeport Road, as illustrated in the figure to the right.

Walker understands the borough is waiting for funding to pursue the improvements recommended in the 2019 safety report. To supplement the recommendations in the safety report, Walker recommends the following changes to the parking along Freeport Road:

- Maintain the non-parallel parking along the corridor, whether 90° or angled. Angled parking may make pulling in and reversing out of the space

Figure 54: Existing Freeport Road Parking



Source: Walker Consultants, 2024

more manageable, but it also limits the ability of parkers to access the spaces from both directions along Freeport Road.

- Shift the parking stalls closer to the street, making room at the top of the stall for a bike lane and pedestrian sidewalk. The sidewalk can then connect back to the street corners, where pedestrians can cross the street to the north or in the east/west direction. (see figure below)
 - Relocating the sidewalk to the top of the stall provides more pedestrian and vehicular traffic separation along a heavily utilized thoroughway. The existing landscaping also provides for a more pedestrian-friendly experience.
 - Mid-block pedestrian paths through the parking provide an opportunity to add ADA parking spaces.
- Where the interior bike lane or sidewalk is not possible, angle the parking spaces so vehicles back into them. This provides better sightlines when exiting the parking stall.

Figure 55: Conceptual Freeport Road Parking and Sidewalk Design



Central Ave to Eastern Ave



Eastern Ave to Brilliant Ave



Source: Walker Consultants, 2024

Additional study is needed to develop this option further.



03

Implementation Plan

Implementation Plan

Walker developed near-, mid-, and long-term recommendations for parking in Aspinwall. When considering implementing these recommendations, it is important to recognize that policy decisions and investments made today will last for decades. Therefore, those decisions should consider how people will get around in the future and be flexible to adapt as travel behavior changes by implementing mobility options that do not involve driving and parking. Recommendations are categorized along the following timeline:

- Near-Term: Strategies that can be implemented in the next 12 months.
- Mid-Term: Strategies and infrastructure can be implemented within one to three years.
- Long-Term: Strategies and infrastructure that may require more than three years to implement.

Each solution recommendation also includes estimates of the following factors.

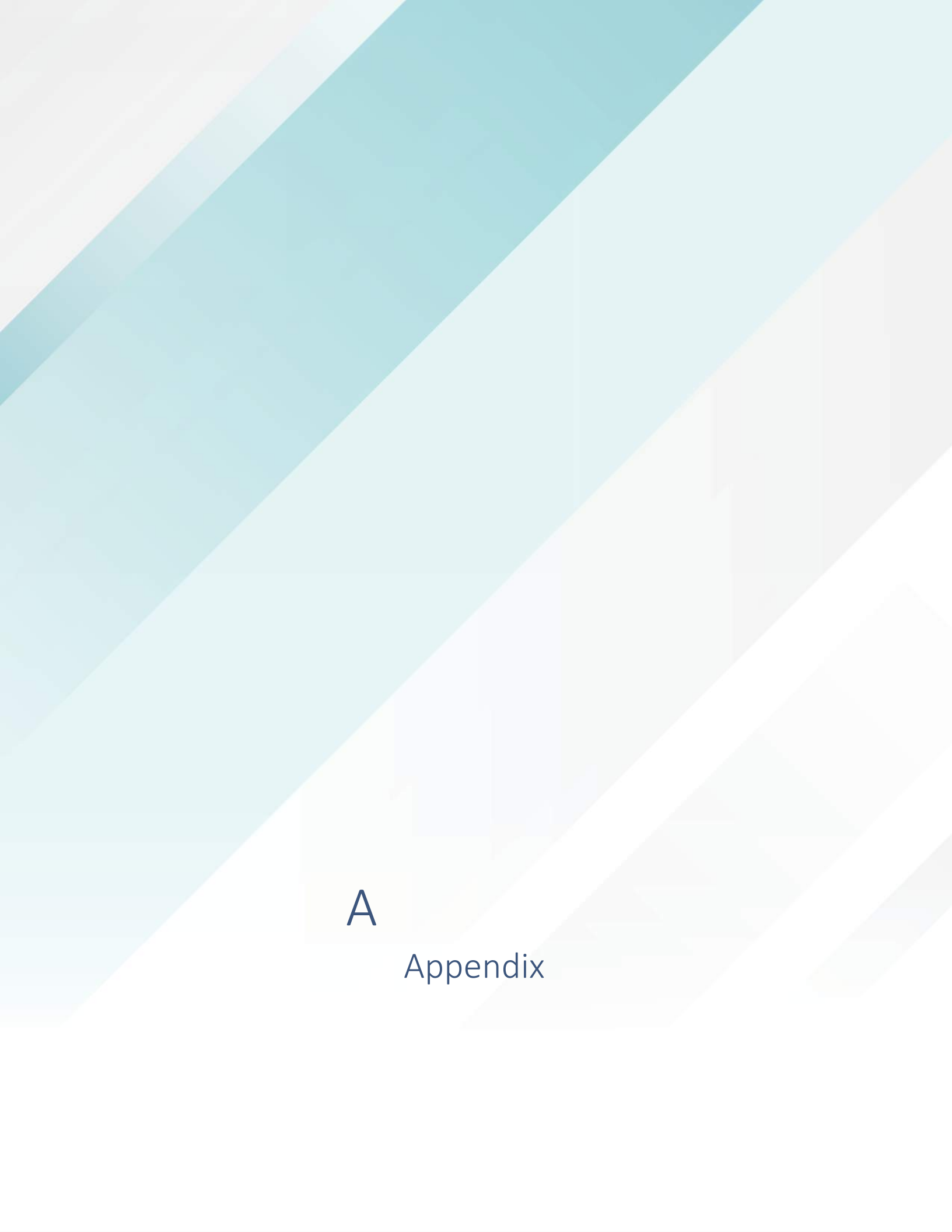
- Cost/Staffing – estimated cost to implement. Unless otherwise stated, we assume City staff may absorb any required tasks within their existing roles.
- Technology – whether there is a need to use existing technology or invest in new technology.
- Revenue Impacts – whether there may be potential positive impacts on revenue.
- Feasibility: low, medium, or high rating based on the level of borough control over solution implementation and the estimated ease of implementation.

Figure 56: Implementation Matrix

Recommendations	Implementation Timeframe	Cost /Staffing	Technology	Revenue Impact	Feasibility
Internal Parking Operations					
Develop a Mission Statement	Near-Term	Existing Staff	None	None	High
Review and Update Written Job Descriptions	Near-to Mid-Term	Existing Staff	None	None	High
Create a Parking Enterprise Fund	Mid-Term	Existing Staff	None	None	Medium
Communications, Marketing, and Wayfinding					
Conduct an Inventory of Existing On-Street Signs and Take Appropriate Action	Near-Term	Existing Staff; Variable, depending on any new signage needed or removal of existing signage	None	Potential Increased Citation	High
Apply Unified City Brand to all Downtown Parking System Signage	Mid-Term	Signage and Installation; Possibly need to engage a signage consultant	None	None	Medium
Update Borough Website to Include Parking Homepage	Near-Term	Variable, depending on whether performed in house or by 3rd party	Existing Technology	None	High
Coordinate with the Chamber of Commerce and Outside Entities to Formalize and Promote Parking Options	Near-Term	Existing Staff	None	None	Medium
Develop and Launch an Ongoing Parking-Related Communications and Marketing Campaign	Near-Term	Existing Staff	Existing Technology	None	High
Publish Annual Parking System Report	Mid-Term	Existing Staff	None	None	Medium
Curb Management					
Revise the Residential Parking Permit Program	Near-Term	Existing Staff	Existing ToCite Software	Potential Parking Revenue	Medium
Adopt a Guide for Designating and Monitoring ADA Spaces in Residential Neighborhoods	Mid-Term	Existing Staff	None	None	Medium
Adopt a Guide for Restriping/Reconfiguring On-Street Parking	Mid-Term	Existing Staff	None	None	Medium
Parking Management					
Introduce a St. Scholastica Parking Permit	Near-Term	Existing Staff	Existing ToCite Software	Potential Parking Revenue	
Update Metered Parking Rates	Near-Term	Existing Staff	None, unless transitioning to accept credit	Potential Parking Revenue	High
Emphasize Consistent and Fair Parking Enforcement	Near-Term	Existing staff in the near-term; Long-term may include investing in a PEO	Mobile LPR system and existing handheld technology	Potential Increased Citation	High
Educate, Advocate for, and Facilitate the Development of Shared Parking Agreements Between and with Location Business	Mid-Term	Existing Staff	None	Potential Parking Revenue; Deferred cost of building additional parking	Medium
Review Time Limits	Near-Term	Existing Staff	None	None	High

Monitor and Modify Hours of Enforcement	Long-Term	Existing staff in the near-term; Long-term may include investing in a PEO	None	Potential Parking Revenue	High
Zoning Requirements					
Revise Parking Geometrics for On- and Off-Street Parking	Mid-Term	Existing Staff	None	None	High
Update Minimum Parking Requirements for Residential Uses	Mid-Term	Existing Staff	None	None	High
Monitor Need to Prohibit/Limit the Leasing of Parking to Non-Residents	Long-Term	Existing Staff	None	None	Low
Simplify Language in the "Shared Parking Portion of the Zoning Ordinance	Mid-Term	Existing Staff	None	None	Medium
Technology					
Procure a Mobile License Plate Recognition System for Enforcement - Integrate with UPSafety/T2	Near-Term	Variable, between \$45,000 and \$60,000, plus cost of vehicle; On-going cost of software service agreement	Mobile LPR System	Potential Parking Revenue	Medium
Transition to a Virtual Permit Management System	Near-Term	Existing Staff UPSafety Integration, Variable	Integrate proposed mobile LPR system with ToCite Software	Potential Parking Revenue	Medium
Expand Online Permit System	Near-Term	Existing Staff Training; Public Awareness Campaign	Existing ToCite Software	Potential Parking Revenue	Medium
Maximize UPSafety Software	Mid-Term	Existing Staff Training and Coordination with T2	Existing ToCite Software	Potential Increased Citation	Medium
Infrastructure Improvements					
Add Bike Lanes/Bike Racks	Mid-to Long-Term	Existing Staff Bike Racks, variable between \$200 and \$500 Bike Lanes, coordination with PennDOT	None	Potential additional tax revenue	Medium
Consider a Structure Parking Solution Long Term	Long-Term	Between \$40,000 and \$45,000 per space	None	Potential Parking Revenue	Low
Consider Redesigning the Recreational Area to Add Surface Parking	Mid-Term	Between \$6,000 and \$8,000 per space	None	None	Low
Redesign Parking Along Freeport Road and Add Crosswalks	Mid-Term	Variable, depending on coordination with PennDOT, civil and traffic consultants, and construction	None	Potential additional tax revenue	Low

Source: Walker Consultants, 2024



A

Appendix

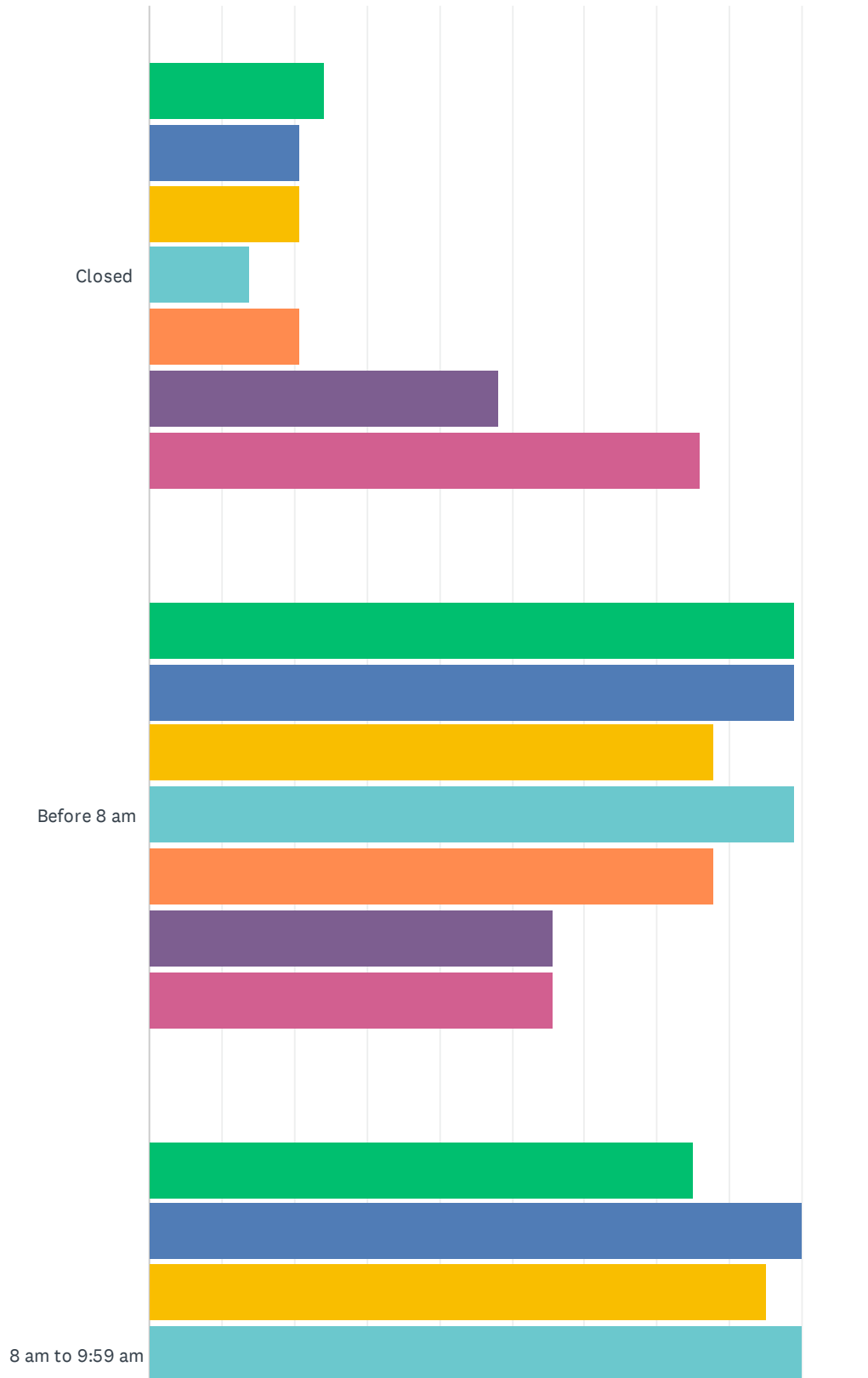
Q1 Please identify where you work on the map

Answered: 33 Skipped: 7

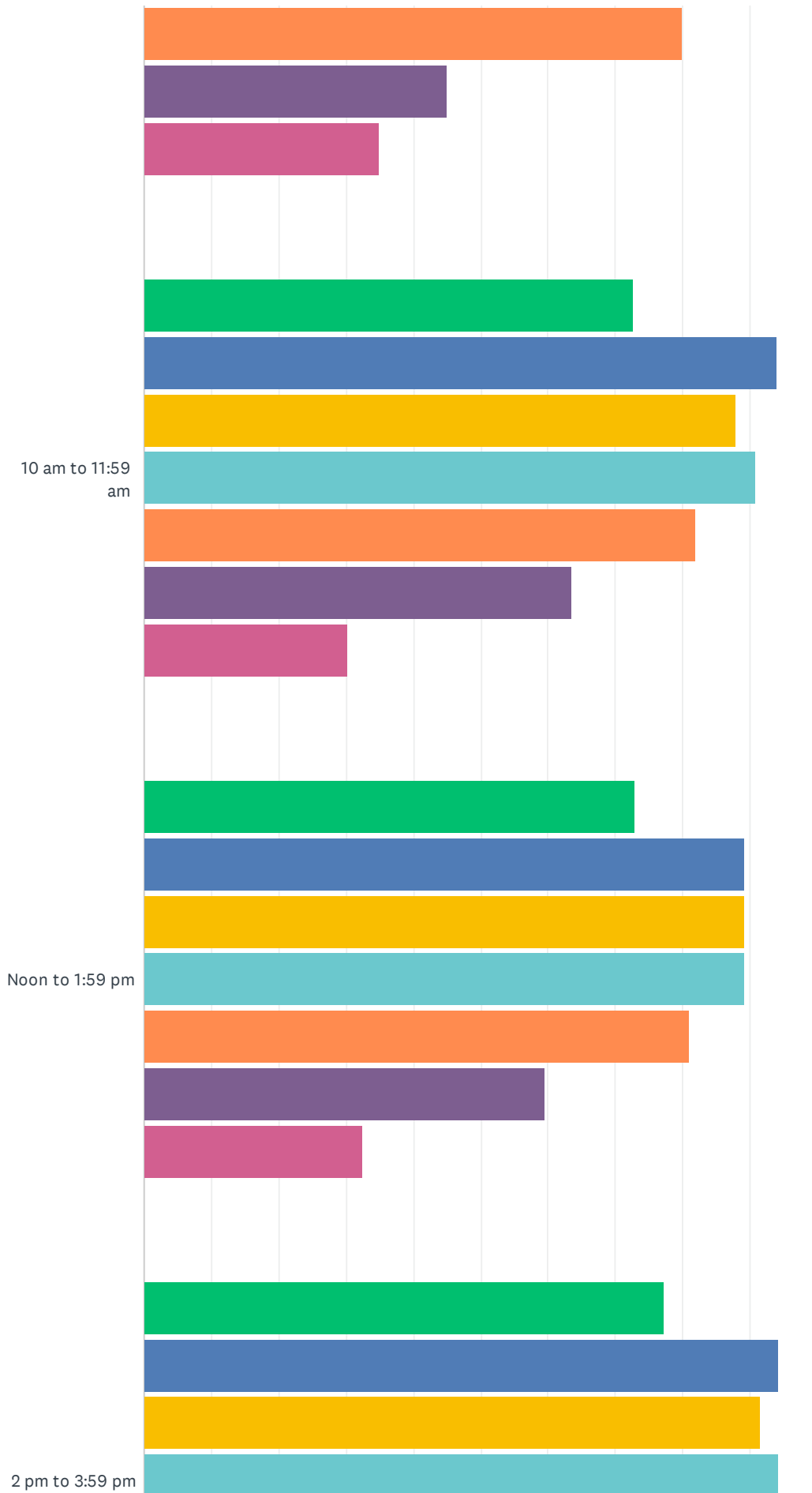


Q2 What are your typical hours of operation? Please check all periods that apply.

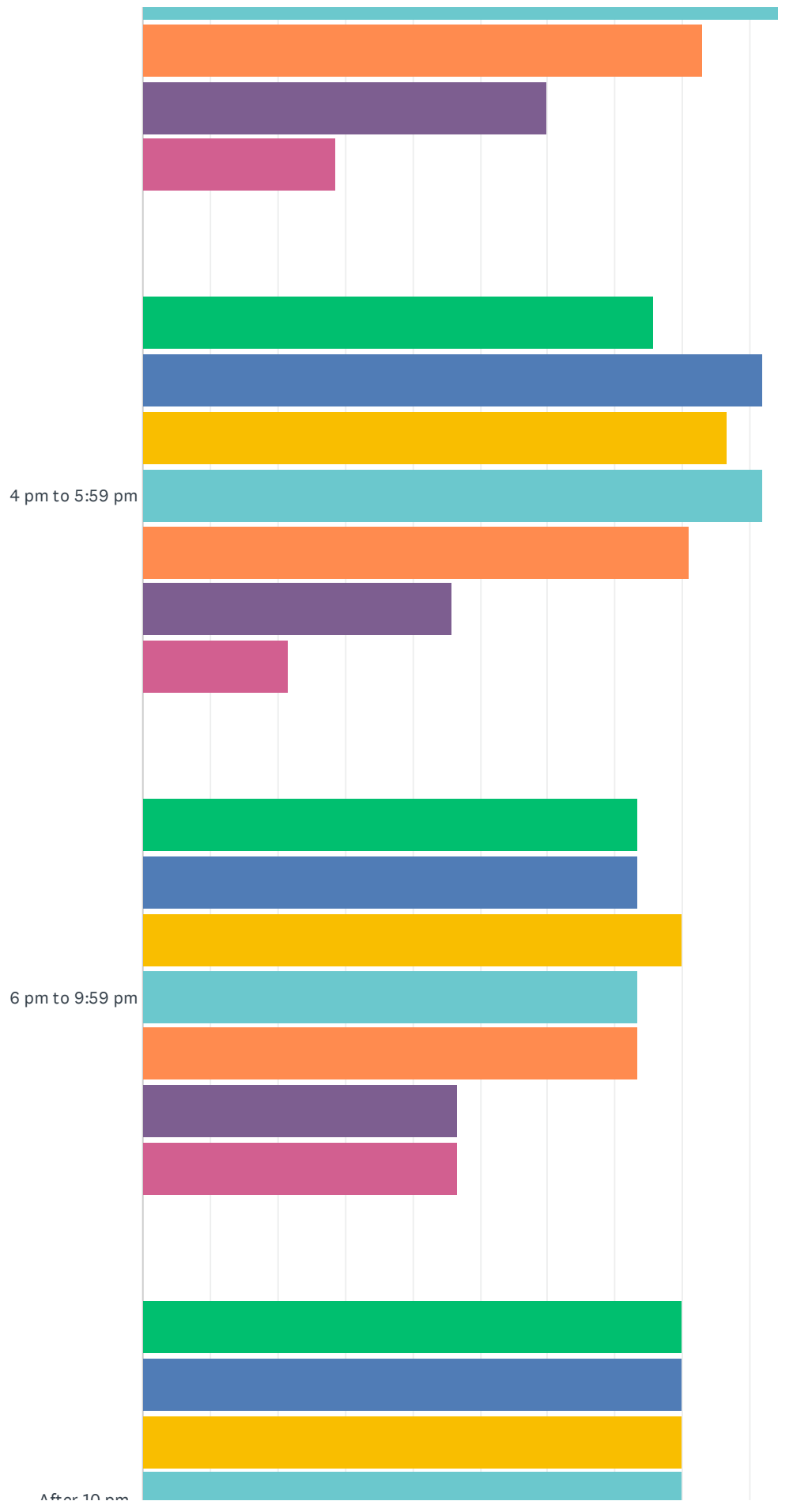
Answered: 40 Skipped: 0



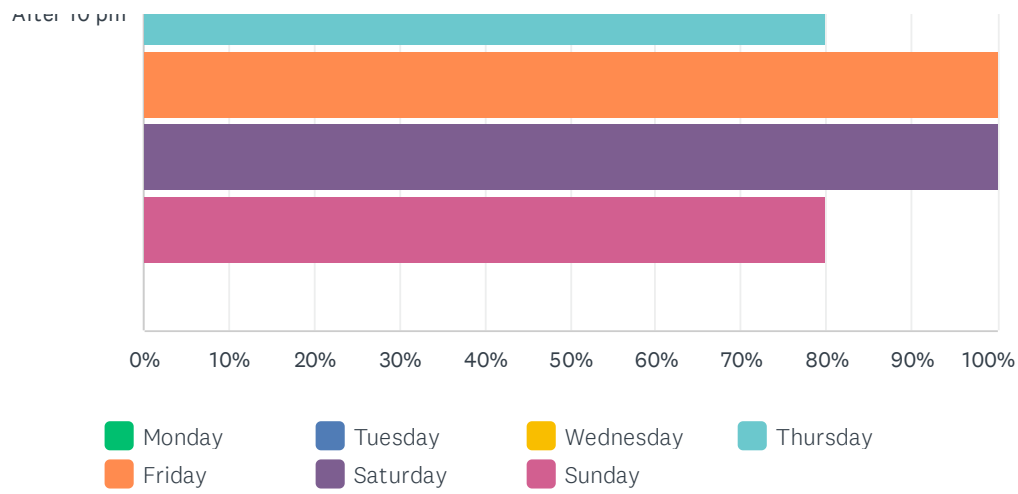
Borough of Aspinwall Business Owner Survey



Borough of Aspinwall Business Owner Survey



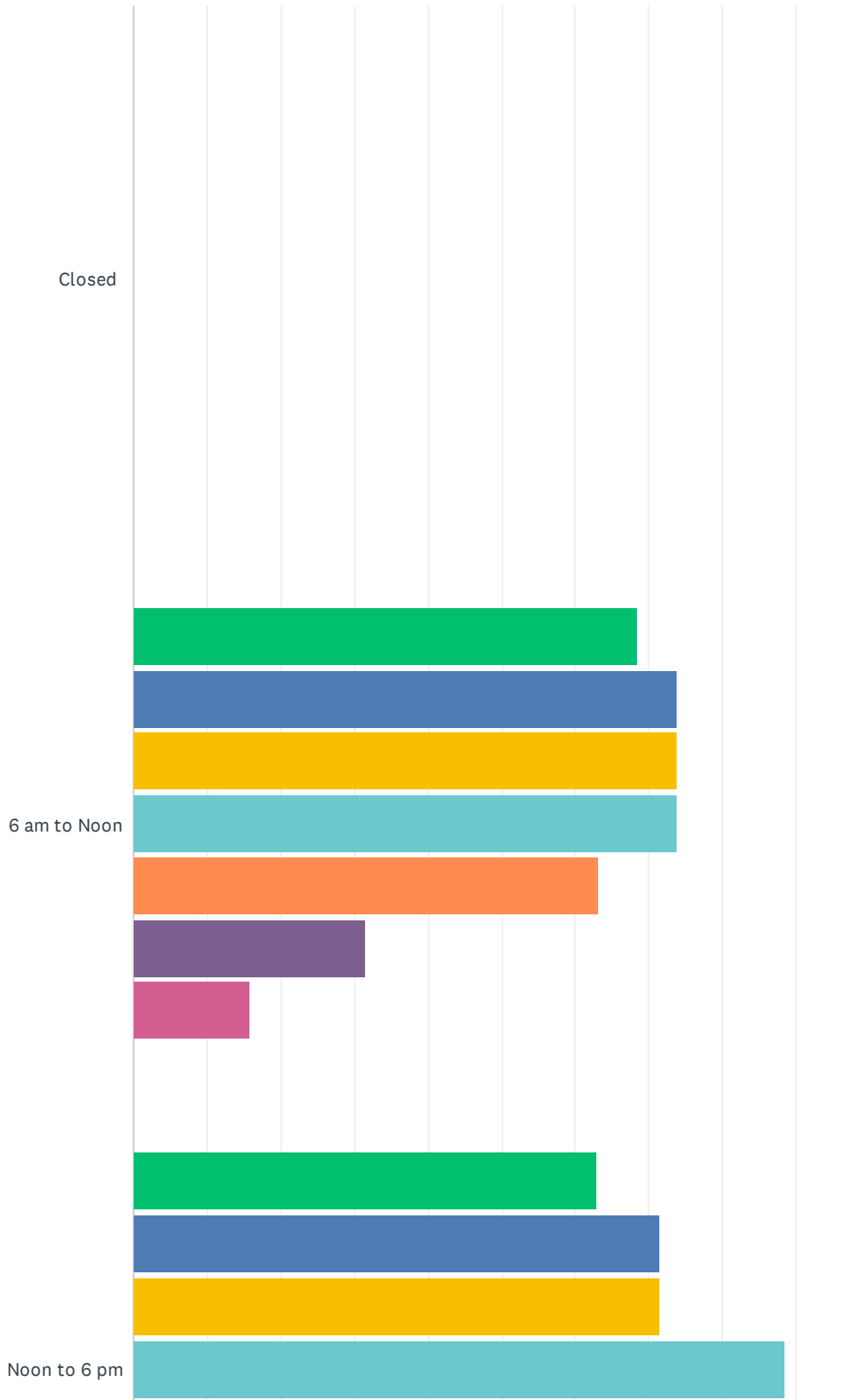
Borough of Aspinwall Business Owner Survey



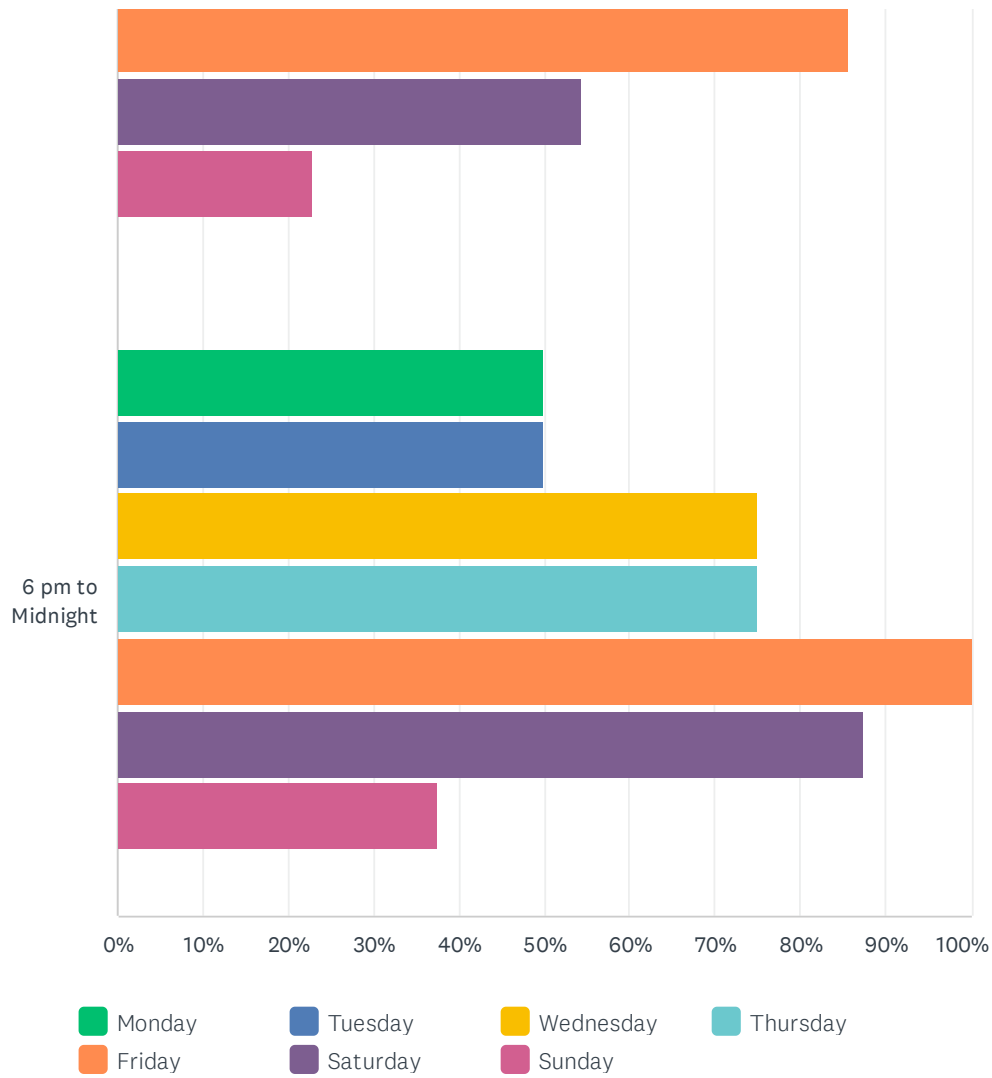
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY	TOTAL RESPONDENTS
Closed	24.14% 7	20.69% 6	20.69% 6	13.79% 4	20.69% 6	48.28% 14	75.86% 22	29
Before 8 am	88.89% 8	88.89% 8	77.78% 7	88.89% 8	77.78% 7	55.56% 5	55.56% 5	9
8 am to 9:59 am	75.00% 15	90.00% 18	85.00% 17	90.00% 18	80.00% 16	45.00% 9	35.00% 7	20
10 am to 11:59 am	72.73% 24	93.94% 31	87.88% 29	90.91% 30	81.82% 27	63.64% 21	30.30% 10	33
Noon to 1:59 pm	72.97% 27	89.19% 33	89.19% 33	89.19% 33	81.08% 30	59.46% 22	32.43% 12	37
2 pm to 3:59 pm	77.14% 27	94.29% 33	91.43% 32	94.29% 33	82.86% 29	60.00% 21	28.57% 10	35
4 pm to 5:59 pm	75.68% 28	91.89% 34	86.49% 32	91.89% 34	81.08% 30	45.95% 17	21.62% 8	37
6 pm to 9:59 pm	73.33% 11	73.33% 11	80.00% 12	73.33% 11	73.33% 11	46.67% 7	46.67% 7	15
After 10 pm	80.00% 4	80.00% 4	80.00% 4	80.00% 4	100.00% 5	100.00% 5	80.00% 4	5

Q3 When is your business the busiest (i.e., the most employees and customers on-site)? Please check all periods that apply.

Answered: 39 Skipped: 1



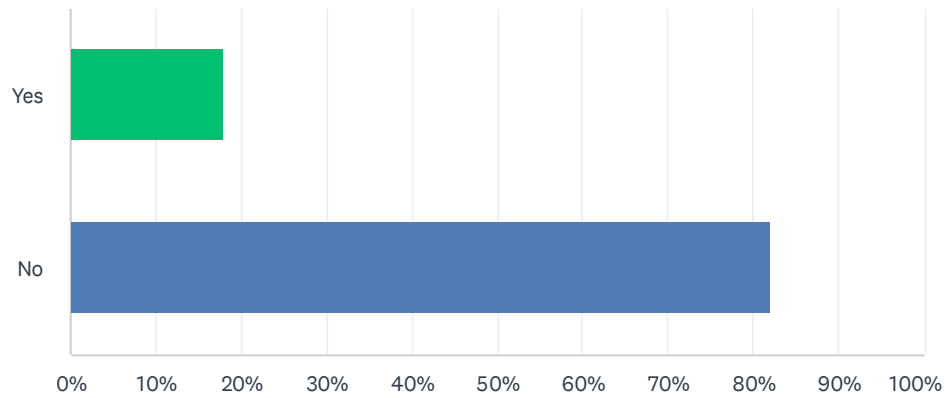
Borough of Aspinwall Business Owner Survey



	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY	TOTAL RESPONDENTS
Closed	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0
6 am to Noon	68.42% 13	73.68% 14	73.68% 14	73.68% 14	63.16% 12	31.58% 6	15.79% 3	19
Noon to 6 pm	62.86% 22	71.43% 25	71.43% 25	88.57% 31	85.71% 30	54.29% 19	22.86% 8	35
6 pm to Midnight	50.00% 4	50.00% 4	75.00% 6	75.00% 6	100.00% 8	87.50% 7	37.50% 3	8

Q4 Do you have any on-site parking for your business?

Answered: 39 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	17.95%	7
No	82.05%	32
TOTAL		39

Q5 How many on-site parking spaces are available for your employees?

Answered: 7 Skipped: 33

Q6 How many on-site parking spaces are available for your customers?

Answered: 7 Skipped: 33

Q7 How many total staff (full-time and part-time) do you employ?

Answered: 37 Skipped: 3

Q8 How many staff typically work during the busiest shift?

Answered: 37 Skipped: 3

Q9 How many customers are in your business during the busiest periods?

Answered: 37 Skipped: 3

Q10 On a typically busy shift, how many of your employees drive to work and park, either in your on-site parking, the Merchant Lot, or on-street?

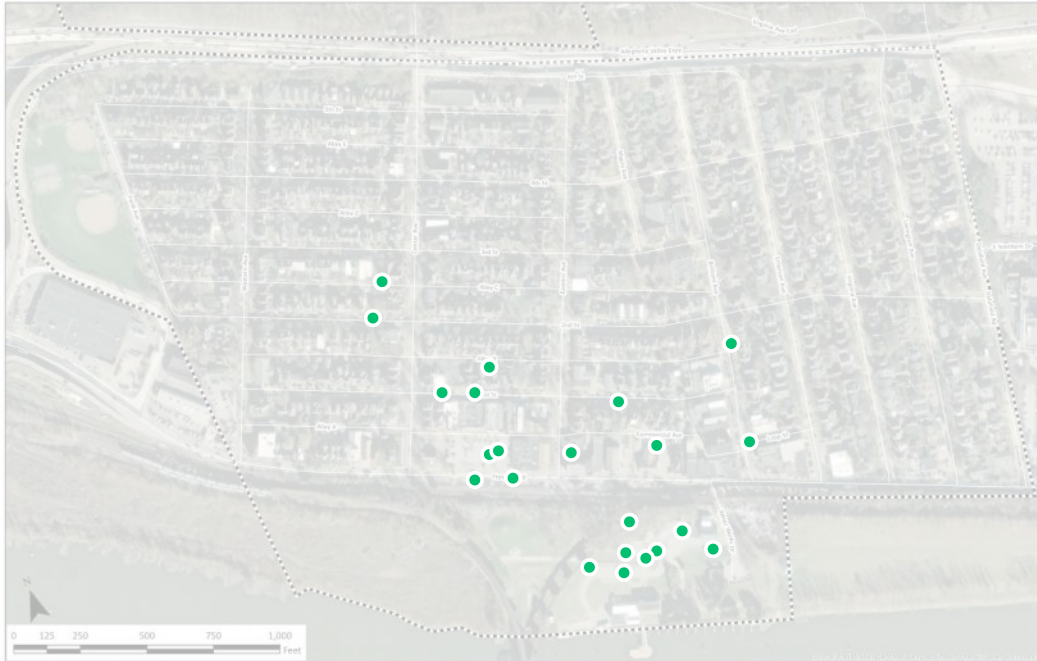
Answered: 35 Skipped: 5

Q11 How many of your employees purchased a permit (or had a permit purchased for them) for the Merchant Lot?

Answered: 35 Skipped: 5

Q12 If they do NOT park in the Merchant Lot, please indicate on the map where most of them generally park.

Answered: 23 Skipped: 17



B

Appendix

						Thursday					Saturday						Thursday					Saturday				
Zone	Street_Nu mber	Code	Street	Side	Supply	9:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM	10:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM		9:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM	10:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM
C	1	OS1W	Delafield Avenue	W	18	6	7	7	9	7	0	12	9	7	5		33%	39%	39%	50%	39%	0%	67%	50%	39%	28%
C	2	OS2E	Lexington Avenue	E	19	6	4	4	5	5	5	6	2	7	7		32%	21%	21%	26%	26%	26%	32%	11%	37%	37%
C	3	OS3W	Lexington Avenue	W	15	3	2	6	3	3	1	1	1	3	4		20%	13%	40%	20%	20%	7%	7%	7%	20%	27%
C	4	OS4E	Virginia Avenue	E	19	4	7	6	13	13	10	12	12	11	11		21%	37%	32%	68%	68%	53%	63%	63%	58%	58%
C	5	OS5W	Virginia Avenue	W	20	10	0	4	9	12	9	8	6	8	10		50%	0%	20%	45%	60%	45%	40%	30%	40%	50%
C	6	OS6E	Emerson Avenue	E	13	7	7	6	8	8	5	7	11	7	6		54%	54%	46%	62%	62%	38%	54%	85%	54%	46%
C	7	OS7W	Emerson Avenue	W	16	8	8	10	4	7	7	6	9	7	11		50%	50%	63%	25%	44%	44%	38%	56%	44%	69%
B	8	OS8N	Loop Street	N	8	1	8	5	6	4	6	6	2	3	1		13%	100%	63%	75%	50%	75%	75%	25%	38%	13%
B	9	OS9S	Loop Street	S	8	1	8	6	5	3	5	7	4	2	0		13%	100%	75%	63%	38%	63%	88%	50%	25%	0%
B	10	OS10N	Freeport Road	N	4	0	3	1	2	1	3	3	2	0	0		0%	75%	25%	50%	25%	75%	75%	50%	0%	0%
B	11	OS11N	Freeport Road	N	2	1	2	1	2	1	0	0	0	0	0		50%	100%	50%	100%	50%	0%	0%	0%	0%	0%
D	12	OS12S	1st Street	S	24	10	14	16	10	13	16	20	15	16	12		42%	58%	67%	42%	54%	67%	83%	63%	67%	50%
D	13	OS13N	1st Street	N	23	14	19	16	15	13	18	16	12	14	8		61%	83%	70%	65%	57%	78%	70%	52%	61%	35%
C	14	OS14N	2nd Street	N	8	6	6	6	5	6	2	1	3	2	0		75%	75%	75%	63%	75%	25%	13%	38%	25%	0%
C	15	OS15N	2nd Street	N	7	1	2	2	2	2	1	1	1	1	1		14%	29%	29%	29%	29%	14%	14%	14%	14%	14%
C	16	OS16N	2nd Street	N	6	5	4	6	5	6	4	4	2	4	4		83%	67%	100%	83%	100%	67%	67%	33%	67%	67%
C	17	OS17N	2nd Street	N	5	5	5	5	5	4	4	5	3	4	5		100%	100%	100%	100%	80%	80%	100%	60%	80%	100%
D	18	OS18S	2nd Street	S	23	11	9	17	19	19	16	16	16	17	21		48%	39%	74%	83%	83%	70%	70%	70%	74%	91%
D	19	OS19N	2nd Street	N	21	8	7	6	7	9	7	14	10	15	16		38%	33%	29%	33%	43%	33%	67%	48%	71%	76%
D	20	OS20S	3rd Street	S	2	1	1	1	3	1	1	4	0	0	0		50%	50%	50%	150%	50%	50%	200%	0%	0%	0%
D	21	OS21S	3rd Street	S	9	4	3	2	4	8	3	0	4	3	3		44%	33%	22%	44%	89%	33%	0%	44%	33%	33%
C	22	OS22N	3rd Street	N	9	6	6	5	4	3	2	4	4	5	5		67%	67%	56%	44%	33%	22%	44%	44%	56%	56%
C	23	OS23N	4th Street	N	3	0	0	0	1	1	0	2	2	0	0		0%	0%	0%	33%	33%	0%	67%	67%	0%	0%
C	24	OS24N	4th Street	N	3	2	2	2	1	0	1	3	0	0	0		67%	67%	67%	33%	0%	33%	100%	0%	0%	0%
C	25	OS25S	4th Street	S	7	4	4	1	3	1	1	1	0	2	1		57%	57%	14%	43%	14%	14%	14%	0%	29%	14%
C	26	OS26N	4th Street	N	0	0	0	0	0	0	0	0	0	0	0		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
C	27	OS27N	4th Street	N	7	2	2	3	3	2	2	3	4	3	3		29%	29%	43%	43%	29%	29%	43%	57%	43%	43%
C	28	OS28W	Delafield Avenue	W	18	12	11	14	12	11	8	10	9	9	11		67%	61%	78%	67%	61%	44%	56%	50%	50%	61%
C	29	OS29E	Lexington Avenue	E	14	4	2	3	2	9	4	4	9	10	9		29%	14%	21%	14%	64%	29%	29%	64%	71%	64%
C	30	OS30W	Lexington Avenue	W	20	7	5	6	10	11	9	9	12	10	15		35%	25%	30%	50%	55%	45%	45%	60%	50%	75%
C	31	OS31E	Virginia Avenue	E	16	7	6	7	6	6	10	7	4	4	7		44%	38%	44%	38%	38%	63%	44%	25%	25%	44%
C	32	OS32W	Virginia Avenue	W	17	6	4	5	7	7	5	5	5	5	6		35%	24%	29%	41%	41%	29%	29%	29%	29%	35%
C	33	OS33E	Emerson Avenue	E	14	8	5	6	10	5	8	10	9	8	8		57%	36%	43%	71%	36%	57%	71%	64%	57%	57%
C	34	OS34W	Emerson Avenue	W	13	7	8	8	6	8	8	8	8	11	10		54%	62%	62%	46%	62%	62%	62%	62%	85%	77%
D	35	OS35W	Brilliant Avenue	W	1	0	1	0	0	0	0	0	3	0	2		0%	100%	0%	0%	0%	0%	0%	300%	0%	200%
D	36	OS36W	Brilliant Avenue	W	6	2	4	1	3	4	0	1	1	3	2		33%	67%	17%	50%	67%	0%	17%	17%	50%	33%
C	37	OS37E	Brilliant Avenue	E	14	4	6	1	2	3	3	5	6	3	8		29%	43%	7%	14%	21%	21%	36%	43%	21%	57%
D	38	OS38W	Brilliant Avenue	W	12	5	3	1	3	6	0	0	3	0	0		42%	25%	8%	25%	50%	0%	0%	25%	0%	0%
C	39	OS39E	Maple Avenue	E	9	6	6	7	2	2	0	0	4	0	0		67%	67%	78%	22%	22%	0%	0%	44%	0%	0%
C	40	OS40W	Maple Avenue	W	7	7	7	7	1	1	2	2	3	2	2		100%	100%	100%	14%	14%	29%	29%	43%	29%	29%
C	41	OS41E	Emerson Avenue	E	3	3	1	1	2	2	4	3	2	3	3		100%	33%	33%	67%	67%	133%	100%	67%	100%	100%
C	42	OS42W	Emerson Avenue	W	8	1	0	2	5	5	5	4	2	3	3		13%	0%	25%	63%	63%	63%	50%	25%	38%	38%
C	43	OS43E	Brilliant Avenue	E	8	3	2	4	5	5	5	5	6	14	5		38%	25%	50%	63%	63%	63%	63%	75%	175%	63%
C	44	OS44W	Brilliant Avenue	W	7	1	1	1	2	1	5	5	3	6	5		14%	14%	14%	29%	14%	71%	71%	43%	86%	71%
C	45	OS45E	Maple Avenue	E	9	3	4	4	2	5	3	3	4	4	3		33%	44%	44%	22%	56%	33%	33%	44%	44%	33%
C	46	OS46W	Maple Avenue	W	9	1	2	1	5	6	3	4	3	3	4		11%	22%	11%	56%	67%	33%	44%	33%	33%	44%
C	47	OS47S	6th Street	S	6	0	0	0	1	1	1	1	1	0	0		0%	0%	0%	17%	17%	17%	17%	17%	0%	0%
C	48	OS48S	6th Street	S	8	1	0	1	3	3	3	3	1	3	3		13%	0%	13%	38%	38%	38%	38%	13%	38%	38%
C	49	OS49S	6th Street	S	2	1	0	0	1	1	1	1	0	0	0		50%	0%	0%	50%	50%	50%	50%	0%	0%	0%
A	50	OS50W	Eastern Avenue	W	4	3	3	3	3	3	3	3	3	3	3		75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
D	51	OS51E	Eastern Avenue	E	4	0	4	4	4	2	1	1	2	4	3		0%	100%	100%	100%	50%	25%	25%	50%	100%	75%
D	52	OS52W	Eastern Avenue	W	3	0	2	1	0	2	1	2	2	2	3		0%	67%	33%	0%	67%	33%	67%	67%	67%	100%
D	53	OS53W	Eastern Avenue	W	3	3	2	1	3	1	0	1	1	2	3		100%	67%	33%	100%	33%	0%	33%	33%	67%	100%
D	54	OS54E	Eastern Avenue	E	3	4	2	2	3	2	2	1	2	2	3		133%	67%	67%	100%	67%	67%	33%	67%	67%	100%

						Thursday						Saturday							Thursday						Saturday					
Zone	Street_Nu mber	Code	Street	Side	Supply	9:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM	10:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM		9:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM	10:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM				
D	55	OS55E	Eastern Avenue	E	3	3	4	2	1	1	2	0	3	2	2		100%	133%	67%	33%	33%	67%	0%	100%	67%	67%				
D	56	OS56E	Eastern Avenue	E	3	2	1	0	2	3	1	1	5	1	1		67%	33%	0%	67%	100%	33%	33%	167%	33%	33%				
D	57	OS57E	Eastern Avenue	E	3	1	1	3	2	2	2	2	2	3	3		33%	33%	100%	67%	67%	67%	67%	67%	100%	100%				
D	58	OS58W	Eastern Avenue	W	3	2	3	2	2	2	2	2	3	2	2		67%	100%	67%	67%	67%	67%	67%	100%	67%	67%				
D	59	OS59W	Eastern Avenue	W	3	1	2	0	2	3	1	1	2	2	3		33%	67%	0%	67%	100%	33%	33%	67%	67%	100%				
C	60	OS60E	Eastern Avenue	E	11	6	5	4	4	7	6	4	4	5	7		55%	45%	36%	36%	64%	55%	36%	36%	45%	64%				
C	61	OS61E	Eastern Avenue	E	3	1	1	2	1	3	3	3	4	2	2		33%	33%	67%	33%	100%	100%	100%	133%	67%	67%				
C	62	OS62E	Eastern Avenue	E	2	1	0	1	1	2	1	0	3	2	3		50%	0%	50%	50%	100%	50%	0%	150%	100%	150%				
D	63	OS63W	Eastern Avenue	W	4	3	3	4	1	1	1	1	1	2	2		75%	75%	100%	25%	25%	25%	25%	25%	50%	50%				
D	64	OS64W	Eastern Avenue	W	3	1	2	2	2	2	1	2	2	2	2		33%	67%	67%	67%	67%	33%	67%	67%	67%	67%				
D	65	OS65W	Eastern Avenue	W	3	1	1	0	1	2	3	2	2	2	2		33%	33%	0%	33%	67%	100%	67%	67%	67%	67%				
D	66	OS66W	Eastern Avenue	W	3	0	2	1	1	0	2	2	2	3	3		0%	67%	33%	33%	0%	67%	67%	100%	100%					
D	67	OS67E	Center Avenue	E	2	1	1	1	2	0	2	1	1	2	0		50%	50%	50%	100%	0%	100%	50%	50%	100%	0%				
D	68	OS68E	Center Avenue	E	3	1	2	2	3	3	3	3	2	2	3		33%	67%	67%	100%	100%	100%	100%	67%	67%	100%				
D	69	OS69E	Center Avenue	E	2	1	1	1	3	1	2	2	2	2	2		50%	50%	50%	150%	50%	100%	100%	100%	100%	100%				
D	70	OS70E	Center Avenue	E	3	3	2	0	2	0	1	1	1	1	2		100%	67%	0%	67%	0%	33%	33%	33%	33%	67%				
D	71	OS71E	Center Avenue	E	3	2	1	2	3	1	2	2	2	2	2		67%	33%	67%	100%	33%	67%	67%	67%	67%	67%				
D	72	OS72E	Center Avenue	E	2	2	1	2	0	1	2	1	2	1	1		100%	50%	100%	0%	50%	100%	50%	100%	50%	50%				
D	73	OS73E	Center Avenue	E	3	2	2	1	1	1	2	0	0	2	2		67%	67%	33%	33%	33%	67%	0%	0%	67%	67%				
D	74	OS74E	Center Avenue	E	2	1	1	1	1	1	2	1	1	2	3		50%	50%	50%	50%	50%	100%	50%	50%	100%	150%				
D	75	OS75E	Center Avenue	E	3	1	3	1	2	1	0	0	0	1	1		33%	100%	33%	67%	33%	0%	0%	0%	33%	33%				
D	76	OS76E	Center Avenue	E	3	3	2	3	0	2	2	2	2	2	2		100%	67%	100%	0%	67%	67%	67%	67%	67%	67%				
B	77	OS77S	Commercial Avenue	S	6	0	5	3	5	3	1	10	2	3	4		0%	83%	50%	83%	50%	17%	167%	33%	50%	67%				
B	78	OS78S	Commercial Avenue	S	3	0	1	0	2	1	0	3	3	0	1		0%	33%	0%	67%	33%	0%	100%	100%	0%	33%				
B	79	OS79S	Commercial Avenue	S	5	3	1	3	5	1	0	3	2	4	2		60%	20%	60%	100%	20%	0%	60%	40%	80%	40%				
B	80	OS80N	Commercial Avenue	N	20	5	8	12	16	5	9	8	10	13	8		25%	40%	60%	80%	25%	45%	40%	50%	65%	40%				
B	81	OS81S	1st Street	S	6	3	4	5	2	1	4	4	5	3	3		50%	67%	83%	33%	17%	67%	67%	83%	50%	50%				
B	82	OS82S	1st Street	S	8	1	12	4	6	5	2	6	3	5	6		13%	150%	50%	75%	63%	25%	75%	38%	63%	75%				
B	83	OS83N	1st Street	N	4	4	5	1	1	1	2	2	2	2	3		100%	125%	25%	25%	25%	50%	50%	50%	50%	75%				
B	84	OS84N	1st Street	N	15	9	11	9	7	8	8	8	10	9	9		60%	73%	60%	47%	53%	53%	53%	67%	60%	60%				
D	85	OS85S	2nd Street	S	20	9	8	8	12	14	11	12	13	11	14		45%	40%	40%	60%	70%	55%	60%	65%	55%	70%				
D	86	OS86N	2nd Street	N	21	6	7	4	10	11	10	9	10	12	13		29%	33%	19%	48%	52%	48%	43%	48%	57%	62%				
D	87	OS87S	3rd Street	S	20	9	9	10	14	15	12	11	11	13	13		45%	45%	50%	70%	75%	60%	55%	55%	65%	65%				
D	88	OS88N	3rd Street	N	18	8	6	8	9	8	11	10	9	14	12		44%	33%	44%	50%	44%	61%	56%	50%	78%	67%				
D	89	OS89S	4th Street	S	21	11	10	9	14	9	17	14	17	18	21		52%	48%	43%	67%	43%	81%	67%	81%	86%	100%				
D	90	OS90S	5th Street	S	20	11	7	10	14	17	14	12	15	4	22		55%	35%	50%	70%	85%	70%	60%	75%	20%	110%				
D	91	OS91S	6th Street	S	22	2	3	2	3	6	3	3	3	1	6		9%	14%	9%	14%	27%	14%	14%	14%	5%	27%				
D	92	OS92E	Western Avenue	E	3	0	1	0	2	0	1	0	1	2	3		0%	33%	0%	67%	0%	33%	0%	33%	67%	100%				
D	93	OS93E	Western Avenue	E	4	1	3	1	0	2	1	1	2	0	3		25%	75%	25%	0%	50%	25%	25%	50%	0%	75%				
D	94	OS94E	Western Avenue	E	4	1	2	0	0	3	1	0	0	0	0		25%	50%	0%	0%	75%	25%	0%	0%	0%	0%				
D	95	OS95W	Western Avenue	W	3	3	3	4	1	2	0	0	0	0	0		100%	100%	133%	33%	67%	0%	0%	0%	0%	0%				
D	96	OS96W	Western Avenue	W	3	1	0	0	3	2	1	1	1	1	1		33%	0%	0%	100%	67%	33%	33%	33%	33%	33%				
D	97	OS97W	Western Avenue	W	4	1	1	1	1	1	1	2	0	0	1		25%	25%	25%	25%	25%	25%	50%	0%	0%	25%				
D	98	OS98W	Western Avenue	W	3	0	0	0	0	1	1	0	1	2	1		0%	0%	0%	0%	33%	33%	0%	33%	67%	33%				
D	99	OS99W	Western Avenue	W	3	1	1	1	1	1	2	2	2	1	2		33%	33%	33%	33%	33%	67%	67%	67%	33%	67%				
D	100	OS100E	Western Avenue	E	3	2	1	2	3	3	2	3	3	3	3		67%	33%	67%	100%	100%	67%	100%	100%	100%	100%				
D	101	OS101E	Western Avenue	E	3	0	0	0	3	3	2	2	2	2	3		0%	0%	0%	100%	100%	67%	67%	67%	67%	100%				
D	102	OS102W	Western Avenue	W	3	2	2	2																						

				Thursday								Saturday																Thursday								Saturday							
Zone	Lot	Type	Supply	9:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM	10:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM		9:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM	10:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM		9:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM	10:00 AM	12:00 PM	3:00 PM	6:00 PM	8:00 PM								
A	1	Residential	15	5	5	4	5	8	6	5	5	3	4		33%	33%	27%	33%	53%	40%	33%	33%	20%	27%		33%	33%	27%	33%	53%	40%	33%	33%	20%	27%								
A	2	Residential	58	29	26	31	32	35	31	27	37	33	35		50%	45%	53%	55%	60%	53%	47%	64%	57%	60%		50%	45%	53%	55%	60%	53%	47%	64%	57%	60%								
A	3	Residential	33	11	10	16	17	19	19	18	17	16	16		33%	30%	48%	52%	58%	58%	55%	52%	48%	48%		33%	30%	48%	52%	58%	58%	55%	52%	48%	48%								
A	4	Residential	124	48	43	52	62	72	60	59	60	60	65		39%	35%	42%	50%	58%	48%	48%	48%	48%	52%		39%	35%	42%	50%	58%	48%	48%	48%	48%	52%								
A	5	Public	22	2	1	0	0	0	0	2	3	0	0		9%	5%	0%	0%	0%	0%	9%	14%	0%	0%		9%	5%	0%	0%	0%	0%	9%	14%	0%	0%								
D	6	Public	63	25	22	23	45	23	22	25	25	29	28		40%	35%	37%	71%	37%	35%	40%	40%	46%	44%		40%	35%	37%	71%	37%	35%	40%	40%	46%	44%								
D	7	Private	29	10	12	12	7	3	9	10	8	9	8		34%	41%	41%	24%	10%	31%	34%	28%	31%	28%		34%	41%	41%	24%	10%	31%	34%	28%	31%	28%								
B	8	Residential	10	5	6	6	6	4	6	5	5	6	5		50%	60%	60%	60%	40%	60%	50%	50%	60%	50%		50%	60%	60%	60%	40%	60%	50%	50%	60%	50%								
B	9	Private	3	0	1	0	1	1	1	0	0	0	0		0%	33%	0%	33%	33%	33%	0%	0%	0%	0%		0%	33%	0%	33%	33%	33%	0%	0%	0%	0%								
B	10	Private	18	4	4	5	5	10	6	4	1	0	0		22%	22%	28%	28%	56%	33%	22%	6%	0%	0%		22%	22%	28%	28%	56%	33%	22%	6%	0%	0%								
B	11	Residential	7	2	1	2	0	0	1	1	0	0	1		29%	14%	29%	0%	0%	14%	14%	0%	0%	14%		29%	14%	29%	0%	0%	14%	14%	0%	0%	14%								
B	12	Residential	8	5	1	4	4	6	2	4	5	6	6		63%	13%	50%	50%	75%	25%	50%	63%	75%	75%		63%	13%	50%	50%	75%	25%	50%	63%	75%	75%								
B	13	Private	8	2	1	2	1	1	0	1	1	1	1		25%	13%	25%	13%	13%	0%	13%	13%	13%	13%		25%	13%	25%	13%	13%	0%	13%	13%	13%	13%								
B	14	Private	5	1	2	2	0	0	1	1	3	0	1		20%	40%	40%	0%	0%	20%	20%	60%	0%	20%		20%	40%	40%	0%	0%	20%	20%	60%	0%	20%								
B	15	Residential	5	1	2	2	0	0	0	1	0	0	0		20%	40%	40%	0%	0%	0%	20%	0%	0%	0%		20%	40%	40%	0%	0%	0%	20%	0%	0%	0%								
D	16	Residential	12	5	5	0	6	8	4	3	4	6	6		42%	42%	0%	50%	67%	33%	25%	33%	50%	50%		42%	42%	0%	50%	67%	33%	25%	33%	50%	50%								
D	17	Residential	18	5	4	7	8	9	7	8	6	7	7		28%	22%	39%	44%	50%	39%	44%	33%	39%	39%		28%	22%	39%	44%	50%	39%	44%	33%	39%	39%								
D	18	Residential	24	10	10	7	10	12	9	8	12	9	9		42%	42%	29%	42%	50%	38%	33%	50%	38%	38%		42%	42%	29%	42%	50%	38%	33%	50%	38%	38%								
C	19	Residential	12	4	3	4	5	6	8	4	4	7	7		33%	25%	33%	42%	50%	67%	33%	33%	58%	58%		33%	25%	33%	42%	50%	67%	33%	33%	58%	58%								
C	20	Residential	14	10	5	6	11	9	8	6	5	8	10		71%	36%	43%	79%	64%	57%	43%	36%	57%	71%		71%	36%	43%	79%	64%	57%	43%	36%	57%	71%								
B	21	Private	9	2	3	2	3	2	1	0	1	1	1		22%	33%	22%	33%	22%	11%	0%	11%	11%	11%		22%	33%	22%	33%	22%	11%	0%	11%	11%	11%								
B	22	Private	12	7	12	7	2	1	7	6	7	1	1		58%	100%	58%	17%	8%	58%	50%	58%	8%	8%		58%	100%	58%	17%	8%	58%	50%	58%	8%	8%								
B	23	Private	17	7	13	12	3	0	11	1	8	0	0		41%	76%	71%	18%	0%	65%	6%	47%	0%	0%		41%	76%	71%	18%	0%	65%	6%	47%	0%	0%								
B	24	Private	10	4	7	6	0	0	9	7	8	1	1		40%	70%	60%	0%	0%	90%	70%	80%	10%	10%		40%	70%	60%	0%	0%	90%	70%	80%	10%	10%								
B	25	Private	6	2	5	3	4	0	3	6	1	0	0		33%	83%	50%	67%	0%	50%	100%	17%	0%	0%		33%	83%	50%	67%	0%	50%	100%	17%	0%	0%								
B	26	Private	22	8	6	8	0	0	4	2	0	0	0		36%	27%	36%	0%	0%	18%	9%	0%	0%	0%		36%	27%	36%	0%	0%	18%	9%	0%	0%	0%								
B	27	Private	19	10	17	13	16	0	1	2	0	1	1		53%	89%	68%	84%	0%	5%	11%	0%	5%	5%		53%	89%	68%	84%	0%	5%	11%	0%	5%	5%								
E	28	Public	52	35	42	41	10	0	15	14	9	1	1		67%	81%	79%	19%	0%	29%	27%	17%	2%	2%		67%	81%	79%	19%	0%	29%	27%	17%	2%	2%								
B	29	Public	27	9	12	6	16	7	8	14	8	6	4		33%	44%	22%	59%	26%	30%	52%	30%	22%	15%		33%	44%	22%	59%	26%	30%	52%	30%	22%	15%								
B	30	Private	5	2	2	5	7	7	6	6	7	6	6		40%	40%	100%	140%	140%	120%	120%	140%	120%	120%		40%	40%	100%	140%	140%	120%	120%	140%	120%	120%								
B	31	Private	20	3	7	7	6	0	2	6	2	0	0		15%	35%	35%	30%	0%	10%	30%	10%	0%	0%		15%	35%	35%	30%	0%	10%	30%	10%	0%	0%								
B	32	Public	42	13	19	18	7	4	3	6	7	3	2		31%	45%	43%	17%	10%	7%	14%	17%	7%	5%		31%	45%	43%	17%	10%	7%	14%	17%	7%	5%								
B	33	Private	10	5	6	4	7	5	5	7	5	4	5		50%	60%	40%	70%	50%	50%	70%	50%	40%	50%		50%	60%	40%	70%	50%	50%	70%	50%	40%	50%								
B	34	Private	7	3	6	7	4	2	5	7	2	3	4		43%	86%	100%	57%	29%	71%	100%	29%	43%	57%		43%	86%	100%	57%	29%	71%	100%	29%	43%	57%								
B	35	Public	70	14	42	37	52	19	23	55	37	41	24		20%	60%	53%	74%	27%	33%	79%	53%	59%	34%		20%	60%	53%	74%	27%	33%	79%	53%	59%	34%								
B	36	Private	9	3	5	4	0	1	8	9	8	0	0		33%	56%	44%	0%	11%	89%	100%	89%	0%	0%		33%	56%	44%	0%	11%	89%	100%	89%	0%	0%								
E	37	Private	90	24	24	33	21	1	34	42	37	38	29		27%	27%	37%	23%	1%	38%	47%	41%	42%	32%		27%	27%	37%	23%	1%	38%	47%	41%	42%	32%								
B	38	Private	8	2	2	2	0	0	0	0	1	0	0		25%	25%	25%	0%	0%	0%	0%	13%	0%	0%		25%	25%	25%	0%	0%	0%	0%	13%	0%	0%								
C	39	Residential	13	7	5	8	10	10	11	9	9	10	12		54%	38%	62%	77%	77%	85%	69%	69%	77%	92%		54%	38%	62%	77%	77%	85%	69%	69%	77%	92%								
D	40	Private	25	2	1	3	1	1	1	2	1	2	2		8%	4%	12%	4%	4%	4%	8%	4%	8%	8%		8%	4%	12%	4%	4%	4%	8%	4%	8%	8%								
B	41	Public	20	6	13	12	1	2	1	1	0	1	1		30%	65%	60%	5%	10%	5%	5%	0%	5%	5%		30%	65%	60%	5%	10%	5%	5%	0%	5%	5%								
B	42	Private	3	1	1	2	3	1	2	3	2	0	1		33%	33%	67%	100%	33%	67%	100%	67%	0%	33%		33%	33%	67%	100%	33%	67%	100%	67%	0%	33%								
D	43	Residential	11	2	3	2	5	6	2	2	6	5	6		18%	27%	18%	45%	55%	18%	18%	55%	45%	55%		18%	27%	18%	45%	55%	18%	18%	55%	45%	55%								
B	44	Private	14	4	4	5	1	0	5	10	3	2	2		29%	29%	36%	7%	0%	36%	71%	21%	14%	14%		29%	29%	36%	7%	0%	36%	71%	21%	14%	14%								



